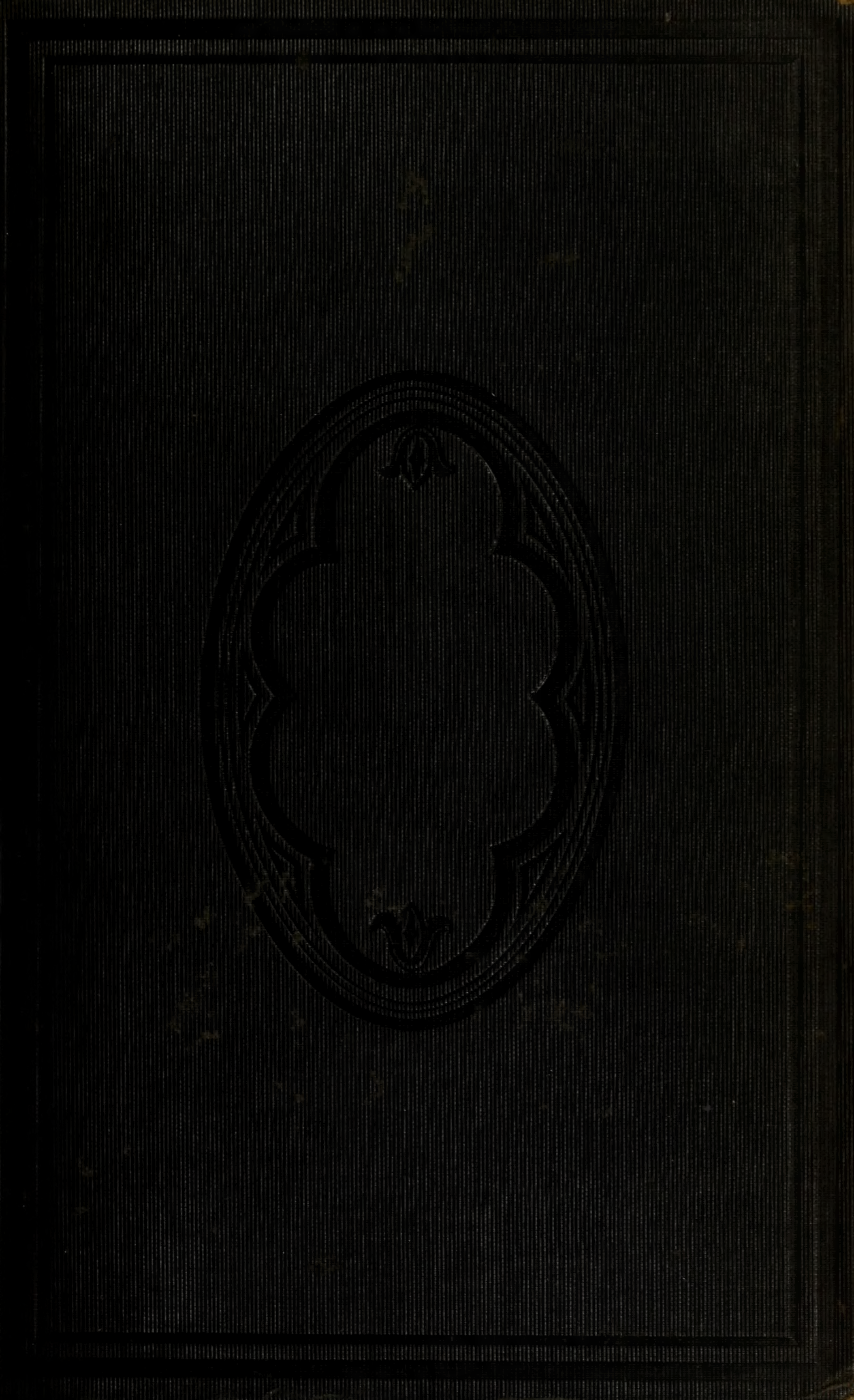

REPORT OF THE CHIEF

OF THE

MASSACHUSETTS DISTRICT POLICE,

FOR

THE YEAR ENDING DECEMBER 31, 1890.

INCLUDING

THE INSPECTION DEPARTMENT AND THE DETECTIVE DEPARTMENT.

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Commonwealth of Massachusetts.

Office of the Chief of the District Police,
Boston, Jan. 1, 1891.

To His Excellency William E. Russell, *Governor of the Commonwealth.*

Governor: — I have the honor to submit a report of the duties performed by the District Police for the year ending Dec. 31, 1890.

Very respectfully, your obedient servant,

RUFUS R. WADE,
Chief of District Police.

Commonwealth of Massachusetts.

REPORT.

By the statutes of the Commonwealth it is made an important part of my official duty, as Chief of the District Police, to report annually to the Governor the work of this department; and, in addition to a detailed statement thereof, to make such recommendations as will tend to greater efficiency in the execution of the laws, and to shed more light upon the important problems of legislation which await settlement. Herewith, I have the honor to submit my twelfth annual report, which comprises the record of the inspection and detective branches of the District Police.

The number of officers remains as it was at the date of my last report; namely, thirty-three men, including the Chief, of whom twenty are detailed for service in the inspection department, leaving twelve designated for detective duty. During the period covered by the existence of this department, the increase in the scope of its work has been in a far greater ratio than in the number of its officers.

Experience has fully demonstrated the wisdom of the law (chapter 118, Acts of 1888) dividing the District Police into two departments, to be known as the inspection and detective department of said force. No member of the inspection department is called upon to perform any other duties than those pertaining to the office of inspector of factories and public buildings, unless his services are commanded by the Governor, as provided by law, in suppressing riots and preserving the peace. But the members of the force continue to have and exercise all powers now given by law to members of the District Police force.

The special aptitude and training required for the work of inspection, developed by years of faithful service, have secured results which have called forth the commendation of your honored predecessors, and fairly entitle those officers to the continued confidence of their superiors in authority. The division of labor authorized and enjoined by the statute above cited has not lessened the individual responsibility of the members of this department more than to effectually concentrate and systematize its work.

THE INSPECTION DEPARTMENT.

There are now twenty officers exclusively employed in the inspection department. Some idea of the extent and nature of the duties of the inspectors may be had by reference to the statutes defining them; but not even the detailed reports of the several inspectors made to this office can give, to those not familiar with the matters discussed, an adequate idea of the vast amount of labor performed by this department. Its duties embrace the enforcement of the laws relating to the hours of labor; the protection of operatives from unguarded machinery; the employment of women and minors; the schooling of children employed in factories and workshops; the preservation of the health of females employed in mechanical, manufacturing and mercantile establishments; reports of accidents in manufactories; safety appliances for elevators; provisions for escape from hotels and other buildings in case of fire; proper ventilation for factories and workshops, and uniform meal hours for children, young persons and women employed therein; the suppression of nuisances from drains, and provisions for water-closets, etc., for the use of each sex employed in factories and workshops, and various other sanitary regulations; the inspection of buildings alleged to be unsafe or dangerous to life or limb, in case of fire or otherwise; the submission to the inspector for approval of a copy of plans and specifications of any building designed for certain public purposes, as factory, workshop, mercantile structure, hotels, apartment houses, lodging or tenement houses, above a certain height; communication between engineer's room and each room where machinery is run by steam, in every manufacturing establishment; proper safeguards at hatchways, elevator openings and well-holes in public buildings, factories and mercantile establishments; forbidding the use of portable seats in aisles or passageways in public halls, theatres, school-houses, churches, public buildings, etc., during any service or entertainment held therein; requiring fire-resisting curtains, approved by inspectors, for use in all theatres, etc.; competent watchmen, lights in hotels, gongs or other proper alarms, and notices posted describing means of escape from fire in boarding and lodging houses above a fixed size, family and public hotels; fire-escapes on tenement or lodging houses three or more stories in height; prohibiting during working hours the locking of any inside or outside door of any building where operatives are employed; public buildings and school-houses, in respect to cleanliness, *suitable ventilation and sanitary conveniences;* the weekly payments of wages by certain corporations to each of its employees; and sundry other matters not necessary here to be specified. Among the earlier industrial laws of Massachusetts are those relating to the hours of labor, commonly called the ten-hour law, and the imposing restrictions upon the employment of children and young persons who had not previously received a certain amount of schooling; and the catalogue might be still further extended.

THE EMPLOYMENT OF CHILDREN IN FACTORIES.

Probably no other subject of labor legislation has excited a greater degree of public interest than that relating to child labor in manufacturing establishments. It must be admitted that, under existing industrial conditions, the labor of children in factories and similar establishments is indispensable, and the duty of ameliorating those conditions is imperative. Restrictions as to age, hours of labor, schooling, and the sanitary requirements to be provided, must not only be insisted upon, but, as experience shall show, additional protection for this class of workers must be afforded.

It is generally assumed that protective legislation for the benefit of children employed in manufactures is much more comprehensive and stringent in this country than in Europe. Our consul at Stuttgart has compiled and forwarded to the State department at Washington an important statement relative to the labor laws of Europe, and their reference to the hours of work and the employment of children. As I believe that some of the facts stated are pertinent to conditions which exist here, and highly suggestive, I venture to repeat them.

In Germany it is positively forbidden to employ children under twelve years of age in any manufactory, and those between twelve and fourteen years may be so employed only six hours daily, of which at least three hours must be devoted to necessary instruction. Between the ages of fourteen and sixteen years they may be employed for ten hours per day in general manufactories, and in spinning works for eleven hours. Work between 8.30 P.M. and 5.30 A.M., and also Sunday work, is prohibited for children, except only in cases of urgent necessity, when special permission must be obtained from the proper authority. In all cases the same authority may entirely prohibit the labor of women in certain industries, or allow it under restrictions and conditions. Persons of both sexes, under eighteen years of age, employed in professions or trades otherwise than in factories, are protected by a special section of the German labor laws, wherein employers are required to take all necessary precautions for the health and morals of their working people, and to allow sufficient time for attendance upon educational institutions.

In Austria the same limitations exist as to the age of children prohibited, save that those between twelve and fourteen years are restricted to eight hours per day, and only allowed to work at all when it is evident that the labor required is not injurious. There is also a regulation based upon a ministerial decree, which provides that, in any manufacturing establishment employing more than twenty persons, the work shall be evenly divided among them, and that they shall regularly exchange machines, to lessen the strain in individual cases. In such manufactories children under fourteen years are not allowed to work, and those from fourteen to sixteen years may only undertake such light labor as will not impair their health, nor retard their growth. The establishments are designated in which women and children may work under certain conditions, and those which prohibit such employment entirely; and they are not allowed in those manufactories which run eleven hours out of the twenty-four without reckoning the stoppages of machinery, or to do any night work, — which term includes the time between 8 P.M. and 5 A.M.

In Hungary the law forbids the employment of children under ten years in manufactories, and permits those between ten and twelve years only by permission of the trades and authorities, and when such labor will not interfere with their attendance at school. The hours of labor are fixed for children of twelve to fourteen years at ten hours. Night and Sunday work are forbidden, and also work specially dangerous to health or limbs, except by permission.

In Great Britain there is a special code, which in substance provides that in the textile industries the hours of labor for women and children between fourteen and eighteen years are from six to seven hours in the morning, from six to seven hours in the afternoon, with two hours' rest for meals, making, all together, ten hours of labor per day. Children may be employed only for six hours daily, or ten hours every other day. In other manufactories the time is ten and one-half hours for women and young persons, and six and one-half hours for children, or ten hours every other day. In housework, the time for women and young people is fixed at ten and one-half hours, and children may work only from 6 A.M. to 1 P.M, or from 1 P.M. to 6 P.M., with a half hour's rest. The age at which children may be employed in manufactories and trades is placed at ten years; but all persons under sixteen years must have a physical certificate, which must be shown to their employer. Night work is forbidden to women, young girls and children.

In France the employment in manufactories of children under twelve years is prohibited; but later legislation makes exceptions in favor of the textile, glass and paper industries, while expressly providing that children so employed shall attend school, and not be kept at work more than ten hours daily. Between twelve and fourteen years, those with sufficient elementary education may work twelve hours per day; those deficient, six hours per day. For all young people under sixteen years of age, and all girls under twenty-one years, night and Sunday work are prohibited.

Switzerland prohibits entirely the employment of women for night and Sunday labor, and also prohibits any such labor in the immediate vicinity of dangerous machinery. Children are not allowed to begin work until they are fourteen years of age.

From fifteen to the end of their sixteenth year they may be employed; but the time, including school or religious instructions, must not exceed eleven hours daily.

In the Netherlands a law was passed as recently as May 5, 1889, which relates to laborers in handwork and housework, as well as manufactories and trades. It places working hours for all women, girls and boys, under sixteen years, at eleven hours daily, only between 5 A.M. and 7 P.M., with at least one hour's rest. Night and Sunday work are prohibited.

The law of Italy forbids children of either sex who are under nine years of age to work in manufactories and mines, and underground work is prohibited to those under ten years. Children between nine and fifteen must produce a physician's certificate, to show that they are of sufficient physical ability to work at the trade specified as their choice. If the work is unhealthy or dangerous, children under fifteen years must have royal permission to engage therein. In certain specified manufactories children between nine and twelve years are allowed to work only eight hours per day. Night work is forbidden to children under twelve years, and to those between twelve and fifteen years limited to six hours.

Denmark's law for the protection of children was passed on May 23. In manufactories and trades children under ten years may not be employed; for children between ten and fourteen years, only six and one-half hours per day, with half an hour's rest; and from fourteen to eighteen years, twelve hours per day, with two hours' rest.

In Sweden the law forbids the employment of children under twelve years, those from twelve to fourteen years only for six hours daily, and those between fourteen and eighteen years for ten hours daily. Night work for minors is forbidden. In mines and quarries boys under fourteen years and women and girls under eighteen years must have their work changed about. A proprietor is made criminally liable for any accident to his employees, caused by any fault of his.

In Russia children under twelve years are forbidden to be employed in manufactories. Those between twelve and fifteen years are allowed to work therein not more than eight hours daily, or not more than four hours continuously at one time, and not between 9 P.M. and 5 A.M. They are not permitted to be employed in such industries as may be deemed to be prejudicial to health. The law also forbids night work, between 10 P.M. and 4 A.M, for children under seventeen years, and women in textile or spinning employments.

The same authority states in his report, to which I am indebted for the above summary, that in the rest of the European countries there are at present no labor laws. Another fact is, that, whereas most European countries, as we have seen, have laws regulating the employment of women and children in manufactories and trades, only a few seem to have regulated the employment of men, and those principally relate to Sunday work, and the number of hours that will constitute a day's work.

It would be an important addition to our stock of information as to child labor in European countries, if we could learn whether the tendency to employ such labor is increasing, or otherwise.

We have the statistics given by the factory inspectors of Saxony, in which it is apparent that the employment of children in factories is rapidly increasing in that country. According to the factory inspectors, the number of children from twelve to fourteen years of age, employed during the years 1888-89, was 10,652; and this is an increase of about 1,000 over the number of the previous year, or more than 10 per cent. The number of children between the ages of fourteen and sixteen employed in the factories increased between the two inspections from 19,953 to 24,111, fully 20 per cent. It seems to be a fair inference that the increase referred to is not confined to Saxony, but extends throughout the German empire. The domestic, social and industrial life of foreign countries is so radically dissimilar to our own, that the facts of the former must be used with some care in any comparison with the latter; certain leading tendencies, however, may be significant as showing a common drift.

In those countries of Europe where the price of living is high and the rate of wages is low, as compared with the standard in the United States, it is dire necessity that every member of the workingman's family shall contribute to the common support. In certain sections of England, for example, the manufacture of chains and nails is a domestic industry, carried on in the house of the workingman with clumsy, hard tools. The wages are so deplorably low that it is a continuous and desperate struggle with utter destitution.

The children in such a family must do their share of the work. Schemes of education do not embrace them. Regulations as to the hours of labor, and Sunday and night work, do not affect them. They can have no hope of rising in the future out of the conditions into which they were born, and which must environ them as long as they live. Why do they not emigrate? That is a financial impossibility. To become assisted emigrants they must graduate first from the parish poorhouse. So they continue to work without motive, hope or encouragement, vainly looking for better times that may never come.

In studying the problems of child labor, therefore, we must take account of some elements which are not common to all countries. In some European countries a human being seems to count for less than he does in this country. There is a fixedness of condition that is inherent in their national life, of which we have but a slight conception. Here, the State has claims other than those to military service, which is the principal one asserted abroad

A child worker in a factory is an embryonic citizen of the republic. It is quite within the range of probability that in due time, by training, education and thrift, he may become a principal stockholder and owner of the factory in which he is now only a bobbin boy. At all events, he must be prepared for the duties of citizenship in a nation in which there is equality of rights and duties. Whatever the condition of his home as to comfort, however pressing the necessity that his earnings shall contribute somewhat to the common support, the law here says that he must have a certain amount of elementary schooling, and whoever on any pretence would deprive him of that, becomes amenable to the penalties of the law.

The flexibility of political and social conditions among us makes possible those changes which are the best answers to the complaints of alien agitators against our American system. Labor is honorable. It is only drudgery, which is labor without heart or motive, that is to be avoided. Given the necessary time for schooling, labor for the young, if not begun at too early an age, nor made excessive, is not to be depreciated.

Among the most hopeful indications of a wise union of work and study is that found in the manual training schools. If there is artistic taste, quickness of perception, and an earnest desire to learn, then the way is open for a broader training than the older methods have supplied. Manual labor and intellectual culture are in no sense antagonistic. Why should not the eyes and the hands be trained as well as the brain? Self-support requires that there shall be harmonious development of all the faculties. Manual training schools meet the demands to a considerable degree, and for the education of the young should receive the support and encouragement of all. There cannot in the nature of the case be a guarantee that even the most favored children of fortune will not at some time be obliged to depend upon their own exertions for maintenance. The broadest possible education and training furnish the best preparation for such exigencies.

The Employment of Illiterate Minors.

One of the most interesting problems growing out of the employment of children is that providing for their education. Several methods have found earnest advocacy since the subject has become of general interest; but all have agreed that the broadest idea of statesmanship demands that a thorough elementary education must be secured for all minors compelled to labor.

General legislation providing for the establishment of free evening schools gave promise of a final solution of the matter. It became evident, however, that more specific remedies must be devised for the class of illiterate minors that was rapidly increasing. A law was passed placing upon the employer the burden of determining whether those in his employ possessed an elementary English education. It was made a penal offence, by chapter 348 of the Acts of 1888, for any owner, superintendent or overseer of any manufacturing, mechanical or mercantile establishment to employ or permit to be employed therein a minor, under fourteen years of age, unless the person or corporation employing him procured and kept on file a certificate and employment ticket for such child, as prescribed by section four of this act; and every parent or guardian permitting such employment was liable to a severe penalty.

It was also made an offence by chapter 433, Acts of 1888, to employ or permit to be employed a minor fourteen years of age, or over, unable to read and write in the English language, providing such minor had been, since reaching the age of fourteen, for one year continuously a resident of a city or town in this Commonwealth wherein public schools are maintained, and not a regular attendant of a day or evening school.

Provision was also made whereby any minor debarred from employment under this act, whose labor was necessary for his own support or that of the family to which he belonged, might obtain a certificate from the school committee, authorizing such employment within such time as might be fixed by them. A trial of this law made it evident that some change therein was necessary; and it was amended by chapter 135 of the Acts of 1889, as follows: —

Section 2 of chapter 433 of the Acts of the year 1881 is hereby amended as follows: —

SECT. 2. Every person who regularly employs, or permits to be employed, a minor fourteen years of age, or over, who cannot read and write in the English language, providing such minor has been, since reaching the age of fourteen, for one year continuously a resident of a city or town in this Commonwealth wherein public evening schools are maintained, and is not a regular attendant of a day or evening school, shall, for every such offence, forfeit not less than fifty nor more than one hundred dollars, for the use of the evening schools of such city or town.

At the last session of the Legislature a further amendment of the law in relation to illiterate minors was made, which is as follows: —

[CHAPTER 48, ACTS OF 1890.]

AN ACT TO AMEND AN ACT RELATING TO THE EMPLOYMENT OF MINORS WHO CANNOT READ AND WRITE IN THE ENGLISH LANGUAGE.

SECT. 3. Whenever it appears that the labor of any minor who would be debarred from employment under section two of this act and amendments thereto, is necessary for the support of the family to which said minor belongs, or for his own support, the school committee of said city or town may, in the exercise of their discretion, issue a permit authorizing the employment of such minor

ERRATA.

Page 14, line 3, for 1888, *read* 1887.

Page 14, line 18, for 1881, *read* 1887.

within such time or times as they may fix: *provided*, such minor make application to said school committee, or some person duly authorized by said committee, for such a permit before the opening of the yearly session of the evening school of said city or town; and the provisions of said section two shall not apply to such minor so long as said permit is in force; *provided*, also, that if such minor has been prevented by sickness or injury from attending said evening school, as provided in said section two as amended by chapter one hundred and thirty-five of the acts of the year eighteen hundred and eighty-nine, the school committee shall issue to such minor the permit provided for in this section, upon the presentation of the following blank properly filled and signed: —

To the School Committee of the :

I hereby certify that I have attended from
to ; that said was sick or injured with ;
and that said was not in suitable physical condition to
attend evening school for the term of days.

(Signed)

Attending Physician.

[Dated]

The school committee of every city or town in this Commonwealth wherein public evening schools are maintained shall furnish blanks described in the foregoing paragraph upon application. [*Approved February 24, 1890.*

The law thus amended by the act last quoted is relieved of certain features whose practical operation, it was alleged, had resulted in great hardship.

It has been contended that knowledge of the English language should not be required in those cases where adequate elementary education in some other language might be shown. But this objection does not rest upon a solid foundation. Minors whose permanent home is to be in this country, who expect to earn their living here, and become citizens, should be required by law to learn to speak and write the English language. Other languages may be deemed accomplishments, but the English language should be a legal necessity. Citizenship in the State cannot be acquired by, and ought not to be granted to, any who are unwilling to learn to read and write the English language.

If there are those who, by reason of early associations, or of loyalty to a foreign government, are averse to complying with such a law, or wish to perpetuate in this country ideas that are inconsistent with true loyalty to it, they should be informed, in the language of the homely saying, that "their room is better than their company." It will be seen that the law, as it now stands, relating to illiterate minors, has been so carefully drawn that its execution will not involve hardships that were inseparable from the statute as it formerly stood.

It may be said that too much power is lodged with school committees by the provision whereby in their discretion an illiterate minor, whose labor may be necessary for his own support or for that of the family to which he belongs, may be exempted from school attendance. But such a provision is deemed to be essential, in order to prevent suffering in numerous cases. Besides, if the practical operation of such exemption shall show that the evils thereby caused counterbalance the benefits, the Legislature may safely be trusted to discover the fact, and apply the remedy.

There are families largely if not wholly dependent upon the earnings of the children of school age; and, while the alternative in such cases is far from desirable, there can be no doubt of the superior claim of the maternal guardian of such children. The power should be lodged somewhere to deal with these exceptional cases, and the class of citizens who compose our school committees in Massachusetts may be relied upon to execute the provisions referred to with the utmost discretion.

An important change has been made in the law relating to school attendance, as the following will show: —

[CHAPTER 384, ACTS OF 1890.]

AN ACT RELATIVE TO THE ATTENDANCE OF CHILDREN IN THE SCHOOLS.

SECTION 1. Every person having under his control a child between the ages of eight and fourteen years, shall annually cause such child to attend some public day school in the city or town in which he resides, and such attendance shall continue for at least thirty weeks of the school year if the schools are kept open that length of time, with an allowance of two weeks' time for absences not excused by the superintendent of schools or the school committee, and for every neglect of such duty the person offending shall, upon the complaint of the school committee or any truant officer, forfeit to the use of the public schools of such city or town a sum not exceeding twenty dollars; but if such child has attended for a like period of time a private day school approved by the school committee of such city or town, or if such child has been otherwise instructed for a like period of time in the branches of learning required by law to be taught in the public schools, or has already acquired the branches of learning required by law to be taught in the public schools, or if his physical or mental condition is such as to render such attendance inexpedient or impracticable, such penalties shall not be incurred.

This act, as will be seen, operates upon "every person having under his control a child between the ages of eight and fourteen years," and requires school attendance for at least thirty weeks of the school year, if the schools are kept open that length of time.

Chapter 348 of the Acts of 1888, section 1, provides as follows: —

AN ACT IN RELATION TO THE EMPLOYMENT OF CHILDREN.

SECTION 1. No child under thirteen years of age shall be employed at any time in any factory, workshop or mercantile establishment. No such child shall be employed in any indoor work, performed for wages or other compensation, to whomsoever payable, during the hours when the public schools of the city or town in which he resides are in session, or shall be employed in any manner during such hours unless during the year next preceding such employment he has attended school for at least twenty weeks as required by law.

This law operates upon the employers of child labor, and seems to be in conflict with the legislation of 1890, to this extent, at least, that the employer is protected in cases in which but twenty weeks' schooling have been secured, while "one having under his control" a child within the prescribed age is liable to the penalty of the law if such child is not kept in school for the period of thirty weeks. The object of both laws is sufficiently apparent, but there is some inconsistency, as stated.

NIGHT WORK OF WOMEN AND CHILDREN IN MANUFACTURING ESTABLISHMENTS.

In another part of this report I have quoted, from an interesting statement of an American consul in Germany, the laws in the respective European countries in relation to night work done by women and children of specified age. Our Legislature has deemed it wise to prohibit such labor, under certain conditions. The law is as follows: —

[CHAPTER 183, ACTS OF 1890.]

AN ACT TO PROHIBIT THE EMPLOYMENT OF WOMEN AND MINORS IN MANUFACTURING ESTABLISHMENTS BETWEEN THE HOURS OF TEN O'CLOCK AT NIGHT AND SIX O'CLOCK IN THE MORNING.

SECTION 1. No corporation or manufacturing establishment in this Commonwealth shall employ any woman or minor in any capacity for the purpose of manufacturing between the hours of ten o'clock at night and six o'clock in the morning, under the penalty of not less than twenty nor more than fifty dollars for each and every offence.

SECT. 2. This act shall take effect on the first day of July, in the year eighteen hundred and ninety-one. [*Approved April 11, 1890.*

It would seem that there could be no division of opinion as to the necessity of such a law, and it is in exact line with the policy of the Commonwealth in respect to the labor of women and children.

The following statute is self-explanatory: —

[CHAPTER 438.]

AN ACT PROVIDING FOR AN APPEAL FROM THE ORDERS OF THE INSPECTION DEPARTMENT OF THE DISTRICT POLICE.

SECTION 1. Any person or corporation aggrieved by the order, requirement or direction of an inspector, given under either of chapters one hundred and forty-nine, three hundred and sixteen or four hundred and twenty-six of the acts of the year eighteen hundred and eighty-eight, may within ten days from the day of the service thereof apply for an injunction against the enforcement of the same to a justice of the superior court; and thereupon, after such notice as the said justice shall order to all parties interested, a hearing may be had before some justice of said court at such early and convenient time and place as shall be fixed by said order, or the said justice may appoint three experts to examine the matter and hear the parties, which experts shall be disinterested persons and skilled in the subject matter of the controversy; and the decision of said court or the majority of said experts in writing, under oath, filed within ten days from the date of such hearing in the clerk's office of said court in the county wherein is the subject of the controversy, may either alter the order, requirement or direction of such inspector, annul it in full or affirm the same. A duly certified copy of said decision, so filed as aforesaid, shall have the same authority, force and effect as the original order of the inspector; and said decision shall have the same authority and effect as the original order, requirement or direction. If such decision shall annul or alter the order, requirement or direction of the inspector, the court shall also enjoin the said inspector from enforcing his order, requirement or direction, and in every such case the certificate required by section two of chapter four hundred and twenty-six of the acts of the year eighteen hundred and eighty-eight shall thereupon be issued by said justice or by his order, or the said experts appointed by said justice.

SECT. 2. The court may award reasonable compensation to experts appointed under the provisions of this act, to be paid by the county in which lies the matter in controversy, provided the appeal is decided against the order of the inspector; and to be paid by the party taking the appeal in case the order of the inspector is sustained.

SECT. 3. If the order, requirement or direction of the inspector is affirmed by the court or experts, costs shall be taxed as in civil cases against the party moving for the injunction, such costs to be paid into the treasury of the county wherein the subject matter lies.

SECT. 4. This act shall take effect upon its passage. [*Approved June 23, 1890.*

The appeal allowed, as above stated, relates to an act to cause proper sanitary provisions and proper ventilation in public buildings and school-houses, an act to regulate the erection and construction of certain buildings, and an act in relation to ways of egress and means of escape from fire in certain buildings.

THE PREVENTION OF ELEVATOR ACCIDENTS.

If an accident were properly defined by calling it an event proceeding from an unknown cause, what shall we designate the numerous distressing events arising from the use of the freight and passenger elevator? It may be said that these sad occurrences are unforeseen, and therefore are accidents. They happen without the design of the unfortunate victims, and are in that sense accidents. But the circumstances of many of these cases are so exactly similar, that the controlling inquiry, mixed with pity for the sufferer, is, "Why should such easily preventable casualties so frequently occur?" Very seldom are so-called elevator accidents occasioned by the cab or car or the machinery which lifts it. The safety devices employed are usually so effective that the breaking of the cable does not in many instances result in injury to the occupants of the car.

In the vast majority of cases the carelessness of the victim has been the sole cause of injuries received. During the past year there have been many fatalities in connection with the use of freight elevators, and in almost every case owing to the want of due care on the part of the injured. In no case was any one in charge of the elevator, and it was anybody's business to run it who saw fit to do so. It is just as rational, where steam power is employed, to allow anybody — man, woman or boy — to start up the engine at his own will, regardless of training or experience in such matters, as to permit anybody to run an elevator who happens to find it more or less convenient to do so. Not until freight elevators are required by law to be put in charge of competent persons, who alone shall be authorized to run them, shall we see the list of casualties, such as those to which attention has been called, diminished.

The Legislature has been repeatedly urged to provide by law that all freight elevators shall be placed in charge of competent persons, just as it is the intention that passenger elevators shall be so conducted. As it is, any person who can get access to the freight elevator seems to be at liberty to imperil his life, and possibly the lives of others. If it be said that irresponsible and reckless persons must expect to suffer from such folly, the tenfold answer is that innocent persons must also suffer; and, if the present custom is allowed to continue, it is in violation of the settled policy of the Commonwealth, which is to prevent the needless destruction of human life by guarding against such dangerous practices.

With reference to passenger elevators, I am still of the opinion that the rate of speed of many, especially those run by hydraulic power, is much too great for assured safety. Since elevators have come into general use, I have felt it my duty to secure, as far as human oversight could effect it, the highest degree of safety, both as respects protective appliances and suitable custodians. It now remains that the law should compel the employment of suitable persons, who shall have entire charge of freight elevators. Such a requirement would not be a hardship, for the pecuniary loss occasioned by an accident might be more serious than the expense of proper supervision. The entire time of a man entrusted with the charge of the freight elevator might not be required for that service, but in any establishment other use might be found for his spare time.

In the city of Boston alone there are about seventeen hundred freight elevators, run by steam, hydraulic power, electricity and hand and horse power; and the number is constantly increasing. It must be remembered that a freight elevator is usually a platform, and is but a skeleton structure, open on all sides. The chances of injury are certainly greater than in the use of a passenger elevator, whose cab or car is enclosed on all sides.

In former reports I called attention to the fact that a large number of passenger elevators were run by boys too young to be entrusted with such responsibility. At last we have legislation intended to remedy this. It is as follows: —

[CHAPTER 90, ACTS OF 1890.]

AN ACT IN RELATION TO THE EMPLOYMENT OF CUSTODIANS OF ELEVATORS.

SECTION 1. No person, firm or corporation shall employ or permit any person under fifteen years of age to have the care, custody, management or operation of any elevator, or shall employ or permit any person under eighteen years of age to have the care, custody, management or operation of any elevator running at a speed of over two hundred feet a minute.

SECT. 2. Whoever violates the provisions of this act shall forfeit a sum not less than twenty-five dollars nor more than one hundred dollars for each offence.

This restriction as to age of custodians of elevators will result in the diminution of the list of accidents brought to the notice of this department.

Protection of Human Life in Hotels in Case of Fire.

The appalling horrors of fire, where human life is in peril, still fill columns of our daily press. Among the most conspicuous recorded since my last report was that of the Leland Hotel in Syracuse, N. Y., which occurred at midnight, the 16th of October last. I should not make special mention of this calamity, but for the fact that some of its incidents illustrate in a startling manner the imperative necessity of additional precautions against fire in large structures, especially in hotels, and justify the urgent recommendations which I have felt it to be my duty to make in successive reports.

It seems that the fire in question started at 12.15 midnight. The instant that the alarm was given in the office, the clerk's hand was on the automatic alarm, and the bells were ringing in every one of the one hundred and thirty-nine rooms in the hotel. Within thirty minutes the walls had fallen in, so rapidly had the fire swept through the building. Before the guests could get into the halls, they were filled with densest smoke. It is stated that each room was provided with rope fire-escapes, a device which consisted of woven cord, with a webbing to pass under the arms, and a safety pulley to retard a too hasty descent. The accounts of the fire all agree in the statement that a number of the frightened inmates of the burning building dropped from the windows or lowered themselves by the fire-escapes. In some instances the fire-escapes became entangled, because of the excitement of those attempting to use them, or ignorance of the right method of use. The Leland Hotel was built about three years ago. It was about two hundred feet square, and was six stories in height. I have dwelt somewhat upon the details of that calamity because there is much of suggestion in it for other communities. So far as the laws of our Commonwealth are concerned, it may be maintained that great attention has been paid to further provision made for the safety of life and limb, by the enactment of the following law: —

[Chapter 426, Acts of 1888.]

AN ACT IN RELATION TO WAYS OF EGRESS AND MEANS OF ESCAPE FROM FIRE IN CERTAIN BUILDINGS.

Section 1. Every building now or hereafter used, in whole or in part, as a public building, public or private institution, schoolhouse, church, theatre, public hall, place of assemblage or place of public resort, and every building in which ten or more persons are employed above the second story in a factory, workshop or mercantile or other establishment, and every hotel, family hotel, apartment-house, boarding-house, lodging-house or tenement-house in which ten or more persons lodge or reside above the second story, and every factory, workshop, mercantile or other establishment, the owner, lessee or occupant of which is notified in writing by the inspector hereinafter mentioned that the provisions of this act are deemed by him applicable thereto, shall be provided with proper ways of egress, or other means of escape from fire, sufficient for the use of all persons accommodated, assembling, employed, lodging or residing in such building; and such ways of egress and means of escape shall be kept free from obstruction, in good repair and ready for use. Every room above the second story in any such building in which ten or more persons are employed shall be provided, if the inspector mentioned in the following section shall so direct in writing, with more than one way of egress by stairways on the inside or outside of the building, placed as near as practicable at opposite ends of such room; stairways on the outside of the building shall have suitable railed landings at each story above the first, and shall connect with each story by doors or windows; and such landings, doors and windows shall be kept clear of ice and snow and other obstructions. Women or children shall not be employed in a factory, workshop or mercantile or other establishment, in a room above the second story from which there is only one way of egress, if the inspector mentioned in the following section shall so direct in writing. All doors and windows in any building subject to the provisions of this section shall open outwardly if the inspector mentioned in the following section shall so direct in writing. No portable seats shall be allowed in the aisles or passageways of such building during any service or entertainment held therein. The proscenium or curtain opening of all theatres shall have a fire-resisting curtain of some incombustible material, and such curtain shall be properly constructed, and shall be operated by proper mechanism; the certificate of the inspector mentioned in the following section shall be conclusive evidence of a compliance with such requirements.

Section 3, chapter 251, also provides as follows: —

Sect. 3. The inspector of buildings in the city of Boston, the mayor and aldermen of other cities, and the selectmen of towns, shall prescribe as they deem necessary, except so far as is specifically required in the preceding sections, what additional night-watch shall be kept, and what further provisions for the prevention of fires, and for the better protection of life in case of fire, shall be made by the several keepers of hotels, boarding or lodging houses within their respective limits; and no license shall be granted to any keeper of a hotel embraced in the provisions of this act, until the requirements thereof, so far as applicable, have been complied with.

The Legislature of 1890 has enacted a law which is as follows: —

[Chapter 307, Acts of 1890.]

An Act for the better protection of human life in hotels in case of fire.

Section 1. Every owner, lessee, proprietor or manager of a hotel situated in this Commonwealth shall, on or before the first day of January in the year eighteen hundred and ninety-one, place or cause to be placed a knotted rope or other better appliance for use as a fire escape in every room of said hotel used as a lodging room, except rooms on the ground floor; which knotted rope or other better appliance shall be securely fastened at one end of it to a suitable iron hook or eye to be securely screwed into one of the joists or timbers next adjoining the frame of the window, or one of the windows, of said room at least five feet from the floor; which rope shall be at all times kept coiled and exposed to the plain view of any occupant of said room; the coil to be fastened in such manner as to be easily and quickly loosened and uncoiled; such rope shall contain knots not more than eighteen inches apart, and a loop on the end at least three inches in length, and shall not be less than one-half inch in diameter and of sufficient length to reach from such window to the ground. Such rope, iron hook or eye and fastenings shall be of sufficient strength to sustain a weight of four hundred pounds, and there shall be plain directions how to use such rope or other better appliance printed and posted within six inches of the hook or eye to which the rope is fastened: *provided*, *however*, that the owner, lessee, proprietor or manager of a hotel which is otherwise suitably provided with fire-escape for the protection of human life in case of fire shall not be required to comply with the foregoing provisions.

SECT. 2. It shall be the duty of the inspector of buildings of every city or town in the Commonwealth or, if there be no such officer, of the chief engineer or the officer performing the duty of chief engineer of the fire department of every city or town in the Commonwealth, in the month of May of each year, to inspect every room of every hotel in the city or town in which he is performing the duty of inspector of buildings or of chief engineer, and to ascertain if the provisions of this act are complied with and to report the condition of the rope or other better appliance to the chief of the district police.

SECT. 3. Any person violating any of the provisions of this act shall be guilty of a misdemeanor, and punishable by a fine of not more than five hundred dollars or imprisonment in the county jail or house of correction for not more than six months or by both such fine and imprisonment.

SECT. 4. This act shall take effect on the first day of January, in the year eighteen hundred and ninety-one.

The most that legislation can do to protect human life from such perils is to enforce such provisions as the foregoing. But nothing that human ingenuity can devise will afford absolute protection under all circumstances. In the case of the Syracuse fire, a local newspaper gives some details, which show that the Leland Hotel horror may serve as a remarkable object lesson to the country. Externally imposing, internally attractive, it is now said that during its construction period it was considered a fire-trap. There were people up and about the hotel, there were electric bells in all the rooms, and the usual hotel rope fire-escapes, besides broad stairways at both ends of the building. On each floor were huge water tanks supplied by large stand-pipes; lines of hose were ready for instant use; all that had to be done was to turn the lever, and the water was ready to play. The wooden ceiling overhead in the kitchen had recently been covered with aprons of iron, and but a week before the fire the walls of the kitchen had been covered with asbestos paper. But the fire apparatus, under the conditions that existed, was useless. The rope fire-escapes, that seem to have been the only dependence in the last resort, in some instances were burned off, or became entangled, or broke. Many of the guests were unable to find the means of egress provided, and the terrible work of destruction was completed within a period of thirty minutes. Such a calamity seems to strengthen the hopeless theory that all safety devices are useless under the conditions attending the burning of the Leland Hotel. Yet it must be remembered that there was an entire absence of some important provisions for escape from fire, such as our Massachusetts laws contain. And it is significant that the chief of the Syracuse fire department has expressed the opinion that the rope fire-escapes saved many lives, both men and women making safe descents.

In this connection I feel it to be wise to urgently recommend an amendment of section 1, chapter 251, Acts of 1883, which provides for certain precautionary measures for protection against fire in hotels, boarding or lodging houses containing fifty or more but less than one hundred rooms, and being three stories high. The minimum number of fifty should be greatly reduced. There are many hotels, lodging or boarding-houses that do not come within the law, but should be included by reducing the number of rooms designated to thirty.

The Legislature of 1888 (chapter 199) amended chapter 104 of the Public Statutes so as to extend its provisions to the towns, and to all the cities with the exception of Boston, and has made it the duty of the inspection department of the District Police force to make such inspections, and to proceed against all persons violating the law. The amended law is as follows: —

[ACTS OF 1888, CHAPTER 399.]

AN ACT PROVIDING FOR THE INSPECTION IN CERTAIN CASES OF BUILDINGS AND OTHER STRUCTURES ALLEGED TO BE UNSAFE OR DANGEROUS.

SECTION 1. Any member of the inspection department of the district police force, when called upon by the mayor and aldermen of any city, except the city of Boston, or by the selectmen of a town, shall inspect any building or other structure or anything attached to or connected therewith in such city or town which has been represented to be unsafe or dangerous to life or limb.

SECT. 2. If it appears to an inspector upon such inspection that the building or other structure or anything attached to or connected therewith is unsafe or dangerous to life or limb, in case of fire or otherwise, he shall proceed to cause the same to be removed or to render the same safe and secure, in the manner provided by sections four to eleven inclusive of chapter one hundred and four of the Public Statutes, and may cause proceedings to be instituted under section twelve of said chapter one hundred and four.

SECT. 3. The words "mayor and aldermen" in section five of said chapter one hundred and four shall for the purposes of this act be construed to apply to the mayor and aldermen of a city or the selectmen of a town as the case may be.

SECT. 4. If in any city or town in which such inspection is made there is no city engineer or chief engineer of the fire department, the mayor and aldermen or selectmen as the case may be shall designate some other officer or officers or some suitable persons in place of the officers so named to act upon the board of survey provided for in section six of said chapter one hundred and four, and the provisions of said section, and of sections seven, eight, nine, ten and twelve of said chapter one hundred and four shall apply to a board thus constituted.

Frequent requests have been made to this department for the inspection of buildings alleged to be unsafe or dangerous to life or limb, and the following copy of a letter received from the inspector of buildings of Somerville is a gratifying recognition of the services of the inspector: —

SOMERVILLE, MASS., May 20, 1890.

RUFUS R. WADE, *Chief of District Police, Inspector of Factories and Public Buildings.*

DEAR SIR: — I desire to convey to you my sincere appreciation of service rendered by you and your efficient deputy inspector, John T. White, in the construction of the Connor building in this city. This was a large, three-story building, the upper story to be used for a public hall, having a seating capacity of eight hundred persons. I reported this building to the mayor and aldermen as unsafe, and the manner of its construction such as to endanger life. The mayor and aldermen, through the city solicitor, called upon you to take charge of the reconstructing of the building. When this vigorous action was taken, the owners were sad, and the contractors mad; but after the completion of the work in a thorough and substantial manner, under the direction of deputy James T. White, the owners came to me and expressed their thanks for the action that had been taken. They said, instead of having a building liable to fall and kill people, and which would be of no value to them, they now had a good, substantial building, safe for the public, and profitable to them. The credit for this good work belongs to you and your efficient assistants. I often read of the good work done by your force in the State; but the work done here in my city brings more impressively to my mind the value of the service rendered by the State Police. Your good work in this case is appreciated by the city council, the citizens, the owners of the building, and by

Your most obedient servant,

JAMES R. HOPKINS,
Chief of Fire Department and Inspector of Buildings.

WOMEN AS FACTORY INSPECTORS, AND THEIR USEFULNESS.

The important change in the factory laws of Pennsylvania and New York, in providing for the appointment of a certain number of women as inspectors, has proved them to possess peculiar qualifications for certain duties of factory inspection, in which the comfort and health of their own sex is concerned.

In the performance of their duties they have received in their visits of inspection courteous treatment on the part of employers, and they have gained the confidence of their own sex by their efforts in securing to them the benefits specially intended by the enactment of the labor laws. Something can be judged of the usefulness of the female inspectors of Pennsylvania and New York by the statements made by some of them at the National Convention of Factory Inspectors, held in New York City the present year. The following papers, read by Mrs. Brewer of New York and Mrs. McEnery of Pennsylvania, I deem of sufficient interest to warrant me in printing them in full: —

Address of Mrs. Alex. Brewer of New York City.

MR. PRESIDENT, LADIES AND GENTLEMEN OF THE CONVENTION: — It affords me great pleasure to have the honor to meet and address you upon this occasion as one of your body, — a co-laborer with you in an important and noble occupation, and, like you, called upon to assist in the enforcement of the laws so wisely framed by our Legislature for the mutual benefit and protection of both manufacturing and laboring classes.

It is the first time that women's aid has been officially invoked by the State to participate in the arduous but laudable work which you have performed so faithfully and satisfactorily since the creation of the various bureaus of factory inspection. Naturally the question will arise as to the usefulness of women as factory inspectors. It is too early to invite criticism upon our work, as we have yet to gain sufficient knowledge of the duties which we are called upon to perform, — for, as all of you know, gentlemen, the duties of a factory inspector are by no means an easy task; their functions are manifold and complicated, and require a careful study, so as to do justice to both workman and employer without wronging either; but I do not hesitate to assert, and think I express the opinion of the general public, that the appointment of female factory inspectors is a step in the right direction, a valuable addition to our factory legislation, and an evidence of the progressive age in which we live. I do not wish to be misunderstood, and to be considered a so-called "blue-stocking" or advocate of woman's rights and suffrage; but I do claim that there are certain spheres in life where woman's efforts are unquestionably essential and almost necessary to accomplish satisfactory results.

Woman's beneficial work and the influence of her affectionate care are felt in all stages of life; from the cradle to the grave no home is possible without her; she is indispensable to man's health and happiness; the kitchen, the sick-bed, are depending upon her; nay, even on the battle-field she is called to care for the wounded and ease the suffering of the dying soldier. Who has not heard of that noble woman, Florence Nightingale, who has given her whole life to a noble cause, and with her tender hand and feeling heart closed many a dying soldier's eyes, and in his last moments, by her gentle presence, acting the part of an absent mother, wife, or sweetheart, recalled before him memories dear of home? Why, then, should not the factory be a good and proper field for woman to aid in reducing the sufferings of toilers? As long as society permits the labor of women and children in factories, either to earn their own livelihood or to assist their husbands and parents to eke out an existence, — so long as this deplorable state of affairs lasts, I say women as factory inspectors are a necessity, and that it becomes a woman's duty to help, and look to it that they are not abused and imposed upon by avaricious or immoral employers. Their usefulness will surely be felt before very long; and I have no doubt, when we meet again in convention a year hence, the fruitful work we shall have performed by that time must be recognized and appreciated even by those who were opposed to female factory inspectors, and the example initiated by the Empire State, creating female inspectors, be followed by other States throughout the Union.

Of course we are not physically fitted for all the duties devolving upon male inspectors; but there are special cases where we may prove of greater value, and can render better service, by a close and careful inspection, than a male inspector. We gain the confidence of one of our own sex sooner than will a man, which I already have experienced in more than one instance since my appointment. Complaints against neglected sanitary arrangements have been made to me, and, when I inquired the reason why they had not stated their grievances and inconveniences sooner to some of the inspectors, the answer would invariably be, "Why, we would rather suffer torture all day than mention it to a man."

It is with great pleasure that I must admit of having met with the kindest reception, wherever I have been, both from the employers and employees, and with a particular manifestation of confidential delight on the part of women, and especially young girls, in all the factories which I have visited. Many vile scribblings on walls, filthy indecencies and inconvenient annoyances, have been pointed out to me, — yes, even immoralities related to me, — which in ninety-nine cases out of a hundred, owing to the natural timidity of woman towards man, perhaps never would have been mentioned, and which I should consider a breach of confidence on my part to disclose even to my superior officers. I have in all cases tried to remedy the evil without going beyond the limits of the law, and I urge my feminine colleagues to use their utmost discretion, when called upon in similar cases, which no doubt they will be as soon as we have gained the full confidence of those affected, and to render relief and assistance without submitting the unfortunate ones to any unnecessary public exposure; for only by strict confidence can we succeed in getting at the bottom facts of existing evils, and only by executing our duties in a womanly, missionary way, acting a true woman's part as peaceful arbitrator between employers and employees, can we hope to secure that success which should be the object of our mission.

But of still greater benefit and usefulness will female inspectors prove in relation to child labor. Woman is the first guardian and tutor of child; she guides its first steps, she teaches it to speak the first word, — in fact, woman's natural destiny and occupation are devoted to the care and welfare of the child, for which she even sacrifices her life. Nothing will escape a mother's watchful eye; she, in fact, becomes responsible for the physical as well as moral training of the child; and well may that nation feel secure which has given proper attention to a careful education of its female population, for on them afterwards depends the education of the nation. If, therefore, we consider the education and welfare of our children best taken care of by female teachers, as is the case in our public-school system throughout this great country of America, should not a woman be entrusted to guard and protect the child in the first years of toilsome labor, and guide its first steps into the realization of life? You will find that the gentleness of woman will be better adapted for it, and accomplish better results, than will the sternness of man. I feel confident that the introduction of females in our factory-inspection system will prove and substantiate its usefulness to the satisfaction of all.

The following paper was then read by Mrs. McEnery of Pennsylvania: —

Factory Inspection.

Mr. President, Ladies and Gentlemen: — I thank you very sincerely for your great courtesy in extending to me an invitation to address you, but I fear that it is almost presumption for so small a specimen of humanity to rise before so large an audience, — to say nothing of its intelligence and expectations. For little women, or, for that matter, little men, there are but two alternatives, — the one to spread our tiny wings and soar, with the eagle, toward dizzy heights; the other to modestly bow our puny heads, and, on bended knees, beseech the big people to excuse us for living at all. Of the two extremes we choose the former; hence this feeble effort, on my part, to paddle a very small canoe in and out among the gallant, stately craft, hoping at least to escape annihilation.

Factory inspection, as a bona-fide branch of our State government, is no longer an experiment, but a settled fact. We are not here to apologize for its inception, but to rejoice together over our mutual efforts and success, and to confer as to how best to build a mighty structure upon the firm foundation already laid. Since "there is wisdom in a multitude of counsellors," much good must certainly arise from our comparison of ideas resulting from our manifold experiences. Of course to some extent our experiences must have been much the same; and no doubt we hold many views in common as to certain changes in the present regime, or new plans to be introduced as helps to the advancement of the good cause. I presume it is in order to call your attention to any matters of this kind that have suggested themselves to me in my daily routine of inspection.

First I will mention wherein a good law can be made better; viz. (Pennsylvania law): "*Sect. 4.* No person, firm or corporation employing less than ten persons, who are women or children, shall be deemed a factory, manufacturing or mercantile establishment, within the meaning of this act."

I believe this clause ought to be changed, to include the smallest factories. Why a manufacturer employing less than ten should be exempt from the requirements of the law, is a mystery. And it is an injustice to the larger manufacturers, and a greater one to the minors themselves; for, as a rule, the larger factories have better sanitary conditions, more safeguards for life and limb, and better conveniences of all kinds for the employee; so, if minors must work, it is far better for them to be employed in the larger factories and stores. I hope a change will be made to include the smallest number permissible by law. Until this is done, and compulsory education made a supplement, the factory law will, to some extent, be defeated.

Another thing that seems imperative to me is to compel employers to use some conspicuous means to indicate the route to the fire-escapes. As a rule, nine-tenths of the employees do not even know whether a building has fire-escapes. I have made it a point of observation, and in nearly four hundred inspections I have found but three places where directions were conspicuously posted, whereby employees in factories, and both employees and customers in stores, might know how to reach the fire-escapes. I therefore pray that we may soon have an amendment to the fire-escape clause, giving factory inspectors authority to condemn unsafe fire-escapes, so as to provide for better and more accessible ones.

For the most part, I have been received not only courteously but cordially by the manufacturers of Pennsylvania, — which goes to show the peculiar mutuality of the law recognized as a benefit to both employer and employee; this, of course, is one of the roses we pluck.

A very pleasant and unusual feature of factory inspection is its double nature; it is seldom in jurisprudence that a law is welcomed by both employer and employee. It is exceedingly pleasant for us to receive a cordial greeting from the members of the firm, and, at the same time, pleasant smiles from the faithful employees, who in us recognize friends looking after their safety and interest. Who knows but that this factory law, when it shall have been fully matured, may help to solve the great problem of capital and labor. One thing is certain, humanity is the only plane to smooth down the rough places between work and wages. We factory inspectors have had abundant opportunity to note the harmony and mutual good feeling when employers conduct their business on principles of humanity. I sincerely hope every State in the Union will wheel into line and adopt a factory law, and emulate

Massachusetts and New Jersey in their compulsory education; that our minors, liberated from the factories, may not join the gamin of the street, thus using the physical strength saved to destroy their mental and moral nature. If the prohibitory age can be made universally fourteen, and all children under that age kept in school the entire scholastic year, great indeed would be the results of our factory law. I trust that the next Legislature of Pennsylvania will place us upon the same footing with other States, that have already secured these supplements which make the law so effectual. No doubt she will avail herself of all good legislation; for, although she is the infant State in this association, she was the first to appoint female deputies. All honor to her for her glorious example.

I congratulate New York for her speedy following in the recognition of our sex, and hope by the time we meet again in national council that every State belonging to the association may be in part represented by women.

From the experience of many years in the enforcement of the laws intended for the benefit of the wage earners of both sexes, I am firmly convinced that there are special cases where more valuable and better service can be rendered to female wage earners by women inspectors than can be secured by male inspectors; and I would recommend the appointment of two female factory inspectors, in addition to the present force of inspectors, in this department of the District Police force.

Ventilation and Other Sanitary Provisions in Factories, Workshops, School-houses and Public Buildings.

The popular interest in the subject of ventilation is of a comparatively recent origin. Within the lifetime of the present generation it was considered undoubted evidence of eccentricity, if not something worse, that a demand should be made for fresh air in the house, the school and the church. It was preposterous to look for it in a factory or a workshop. One way to warm a room in winter was to batten up the cracks through which the slightest bit of air could pass. Doors and windows were listed, and the anxious mother calked with cotton batting the sashes of the sleeping-rooms, to protect her children from the dangers of pure air. There was absolutely no attempt at ventilation anywhere, unless by the crude and senseless method of opening doors and windows occasionally. By this means the sudden inflow instantly lowered the temperature, and in some instances did more harm than good.

To educate the public concerning the correct principles of ventilation, drainage and similar matters, has been a laborious and somewhat discouraging task. It has been necessary to stem the tide of indifference, and to arouse the sense of responsibility. It is easy to shirk public duties.

Evils that are palpable to the senses, that thrust themselves upon our notice, and whose results are immediate, it is natural to suppose would challenge prompt and vigorous resistance. The history of the movement to secure the best scientific ventilation and drainage by legislation, shows, however, that not until recently have suitable efforts been made to secure and maintain the public health by sanitary laws, rigidly enforced.

If expedients are less general and distinctive, if infectious diseases are more speedily controlled than formerly, it is because the people are more enlightened than in those days when such occurrences were attributed to what was termed Divine Providence. The list of preventable diseases is continually being enlarged. It would be impossible within the domains of civilization now to decimate an entire city, as was done by the great London plague in the seventeenth century; and even the yellow fever, that in the earlier days of the present century swept over our own land with such destructiveness, is no longer the despair of scientific medical authority.

The care of health and life is an individual concern. If habits and customs are shown to be perilous to public health, it is not deemed an invasion of private rights to invoke the strong arm of the law. It is recognized as a personal duty to spread the knowledge of sanitary science, and to insist upon compliance with its regulations. It is not the statement of alarmists, but the authentic records of vital statistics, that one-third of the human race die before they reach the age of five years. It is an appalling death rate, and suggests considerations for the study of other than medical men. A very considerable proportion of those who survive that age are enfeebled, and fail to reach the allotted age of man.

The practical question of the day is, "What can be done, through a knowledge of sanitary laws and conditions, to arrest these tendencies, and remove the evils known to exist?" It is obvious that we must begin with the children, and provide in their homes and school-houses the sanitary protection required. The dangers of bad drainage and imperfect ventilation, or none at all, are somewhat under individual control. Children reared in such homes must contend likewise against other drawbacks to vigorous health; but they spend enough time in the open air to mitigate some of the evils referred to. But life in the school-room is a more serious matter. Here their movements are under authoritative restraint. They are kept in their seats for a prescribed number of hours, and compelled to breathe air laden with impurities. Were it not for the recess, the health of school children would be greatly impaired, under the conditions that prevailed formerly everywhere, and that now exist to a greater extent than is pleasant to contemplate. In the country towns and villages the school-house is apt to be in an open, sunny space; but the crudest possible ventilation, or more likely none whatever, is the rule.

The notion that young children must be kept perfectly still and motionless during the session of school, that no noise from the movement of the feet, in shifting the position to gain ease and comfort thereby, can be allowed, is a barbarism that is responsible for much suffering. Common-sense ideas have considerably modified the restraints once so generally imposed upon young children in the school-room. The kindergarten system was the beginning of public enlightenment. Now, in the absence of scientific ventilation in many school buildings, it is the practice to suspend the studies at intervals, open all the windows, and, while the air is changing, exercise the children in marching and light gymnastics. This is certainly an elementary method of correcting the evils of foul air in the school-room, and is better than nothing; but it is a poor substitute for complete ventilation during the entire school sessions.

The constant crowding together of many children in contracted school-rooms, not specially adapted to secure complete circulation of air, is necessarily injurious. The air is loaded with noxious exhalations from the lungs and skin. The lower current of air is cold, and the higher is superheated. The children in such a room for hours together suffer from cold feet, while their throbbing brains unfit them for study. Casual visitors to the average school-rooms need no argument to prove the fact that the conditions are largely against both health and comfort. A proper system of ventilation makes sure provision against the dangers which have long lurked within the precincts allotted to countless children for a considerable period of their lives.

It has been said repeatedly, and there is some force in the remark, that, if the school teacher possesses common sense, and some experience, many of the evils complained of would be avoided. Such a teacher would accomplish better results with imperfect means than one inexperienced and indifferent in charge of a perfected system. It ought to be insisted upon, with great plainness of speech, that uncleanliness of the persons of school children, the blame for which may be safely imputed to the lack of home training, is the source of a large proportion of the foul air for which school-rooms are so notorious. In a lecture delivered before the teachers of public schools, by Prof. F. W. Draper, he said : —

> The ordinary conditions of the unrenewed air of a school-room are quite enough to astonish us, if we stop a moment to think of them ; for there are not only the inevitably vitiating effects produced by respiration and the constant activity of the skin in persons who are healthy and cleanly, but the additional exhalations proceeding from unclean bodies, from ill-odored mouths, from decaying teeth, from dirty clothing, too frequently accompanying the city school-boy or school-girl to the crowded room which is the scene of their daily tasks.
>
> The effects of breathing and re-breathing an atmosphere thus charged with harmful matters are not far to seek. Every one of us must have experienced at some time or other the noxious influence of an air thus vitiated. We all remember the unpleasant closeness, the headache, languor, and sometimes nausea, resulting. We are told of the poisonous effects, in the form of fever, coming from the larger doses of this irrespirable air. There is another

important thought in this connection. Besides these direct effects of inhaling a foul atmosphere, an indirect and not less significant consequence is recognized. Disease may be powerless in its assaults on the perfectly healthy human system, while it may find lodgement in a body which bad air, by lowering the tone and depressing the vital vigor, has made an easy victim of epidemic influence. Many a case of sickness proves fatal on account of an unperceived prostration of the sufferer's strength by continuous exposure to an atmosphere impure from exhalations from the body; and many children yield easily to contagious disease through the devitalizing effects of breathing an unwholesome school-room air.

In many school-rooms the average purity of the air would be raised if the teachers should insist that their scholars should be cleanly in their persons and clothing.

When we talk of improved methods of education, we ought to consider that these are largely controlled by other matters, that are not supposed to have any connection with them, but which are fundamental. Of what avail that teachers and text-books, methods and supervision, are of the best, when the primary laws of health are grossly violated, and the surroundings of the pupils, who are the subject of all this preparation, are wholly unfit?

If the physical condition of school children is not what it should be, the expensive machinery of education is maintained for inadequate results. The discussion in relation to the teaching of history in our public schools, a controversy which has developed more heat than light, has revealed one fact that had not been so well established; namely, the deep attachment of the vast majority of our citizens for our American system of public schools; coupled with this is an equally strong determination to do no injustice to any portion of our people in the administration of that system. But may we not hope that this remarkable development of interest will be extended so as to embrace the no less vital matter of requiring that every school in the Commonwealth shall be kept in the best possible sanitary condition; that the dangers which scientific investigation has disclosed, and which legislation has recognized, shall be permanently exterminated?

The work of investigation has proceeded with all reasonable dispatch, and great advances have been made in the direction of securing better ventilation and drainage in our school-houses. To other agencies has the Commonwealth committed the duty of supervision of common-school education; but this department is required to enforce the laws in relation to the condition of school buildings.

It is a curious fact that these elementary laws of public health, with which it might be supposed that every intelligent community is familiar, are not generally accepted without resistance. And the inertia of popular indifference is an obstacle whose power it would not be easy to over-estimate. It would seem that a crusade in the interests of securing perfect sanitary conditions in our public school-houses would be a mighty, irresistible movement. There is certainly no organized opposition thereto; but its success demands ceaseless vigilance and the most persistent presentation of the facts gathered by daily observation.

Our statutes in relation to ventilation include also factories, workshops and public buildings. The same arguments apply to these, and the same needs exist But the materials that are used and the processes employed in factories and workshops in many cases are in themselves sources of impurity, and the dust and odors that arise are oppressive and sometimes dangerous to health. Ventilation is essential to make the conditions of labor under such circumstances even tolerable. The air receives the impurities incidental to the employment followed in workshops and factories, as well as those that are common in all buildings.

It may be said that many elements of impurity are inseparable from manufacturing and mechanical occupations; but, besides those that are unavoidable, there are preventable evils so serious as to have attracted the attention of scientific authorities. Experiments and investigations have shown that pure air contains a certain proportion of carbonic acid gas, and that the proportion does not vary much from four parts in ten thousand of air. It has been further shown that, if the quantity of carbonic acid gas be increased to eight parts in ten thousand, by respiration, it is no longer fit to breathe, and, if breathed continuously, it will produce disease.

There is a wide difference of opinion among scientific experts regarding the amount of air vitiated by respiration. It is stated, upon competent authority, "that the average individual vitiates three thousand cubic feet of air in an hour, and its place should be supplied by an equal quantity of pure air." If this quantity is not obtained, the proportion of organic impurities increases, until the air becomes so intensely poisonous as to be productive of serious disease.

These are the conclusions of well-known scientific authorities, whose experiences entitle them to great respect. But facts of common knowledge challenge our attention. In warm weather, when doors and windows are open, the condition of the air within a building may not be noticeable; but, when artificial heat is required, no matter of what character, and windows and doors must be kept closed for warmth, the lack of life in the air is soon apparent, even under somewhat favorable conditions in other respects. There is a sense of closeness, on coming into a room, which at first is stifling; and it is no less dangerous to health to remain because one may become accustomed to it after a brief interval. A properly ventilated room is one from which the impure air is removed as quickly as it becomes unfit for healthy respiration, and its place supplied with pure, fresh air.

Ventilation Practically Considered.

The methods of producing ventilation may all be classed under three heads, — the natural, mechanical, and by aspiration.

The natural is produced by the action of unequal density of air, caused by the varying conditions of temperature and barometric pressure from day to day. It is not reliable, as a change in the wind often produces a stopping of the flow of air in the flues. It has been frequently observed in our inspections of school buildings, heated by both furnace and steam, and provided with flues, passing from basement to cupola, the flues carried through a cold garret, and found to be useless for ventilating purposes. It has also been seen that, when the weather is sultry and oppressive, the atmosphere has not sufficient weight to displace the air in the foul-air flues.

The mechanical is produced by the action of fans or similar devices, creating an air movement, regular and unvarying, in stated volumes, removing foul air as fast as it is generated or becomes unfit for healthy respiration, and drawing in fresh, pure air to take its place. By this process, continued indefinitely, the atmosphere of a room is kept at all times free from impurities, and the normal purity of the air maintained.

By aspiration we mean heated chimneys or shafts for the removal of columns of vitiated air from occupied apartments. Heated air expands according to an ascertained law applicable to all gaseous bodies; namely, the expansion is equal to $\frac{1}{480}$ of its volume for each degree of Fahrenheit that the temperature is raised from 32° to 212°. This method of ventilation is in common use, and satisfactory results have been obtained.

The modes of producing ventilation thus explained, the question may be asked as to what should be the size of fresh-air inlets, outlets, ducts and shafts for the successful ventilation of school buildings, halls or audience rooms. Experience and careful observation has made clear the fact that it must be determined by the number of persons to whom air is to be supplied, and that the maximum seating capacity of such occupied apartments must be the basis.

For example, take a school-room capable of holding fifty pupils; the best authorities tell us that not less than 30 cubic feet of air per minute is required for each person, to maintain a reasonable degree of purity. Taking, then, the low standard mentioned per minute for each individual, fifty persons would require fifty times 30, or 1,500 cubic feet per minute. Take the dimensions of the ordinary school-room occupied by fifty pupils, — which will vary but slightly from the following figures: length, 30 feet; width, 28 feet; and height, 12 feet, — and we find the cubic contents 10,080 feet. Dividing this sum by 1,500, the amount of air required per minute by the occupants of the room, we find as the result less than 7, representing the number of minutes during which the air of such a room would retain a reasonable degree of purity without being changed by the renewal of pure air. Regardless of the size of the room, we should supply, to fifty persons occupying the same, 1,500 cubic feet of air per minute, and this amount should be the minimum.

In estimating the rate of air motion, 5 feet per second should be the minimum, although, if the enlargement of the foul-air outlets be of ample size, a much higher rate of inflowing air can be estimated. The number of square feet for the foul-air outlets can be determined by dividing 1,500, the amount of air required per minute for fifty persons, by the amount of air which will pass out of a room through an opening one foot square, at the rate of 5 feet per second. Multiplying 5 by 60, as there are 60 seconds in a minute, and we have 300 cubic feet, which is the amount of air that will pass out through an opening one foot square. By dividing 1,500 by 300, it will give 5 feet as the size of the foul-air outlets required for a room occupied by fifty persons. This means 5 feet of actual, *clear*, *unobstructed opening*. The positions of foul-air and fresh-air inlets are matters of importance in the ventilation of school-rooms or large audience-rooms.

In large school-rooms, halls and audience-rooms, it has been found by practical experience and observation that the best results are obtained when fresh-air inlets are placed 6 or 8 feet above the floor level, and the foul-air outlets near the fresh-air inlets and at the level of the floor. Having provided for the removal of the vitiated air, inlets for the supply of fresh air must be provided; and, in estimating the size of fresh-air inlets we should not forget that, the moment the current of vitiated air is drawn from the room, air will find its way, independent of properly constructed channels, through every crack and opening in every part of the room and around closed windows and doors. This additional amount of air received should be taken into consideration in estimating the size of fresh-air inlets. As a rule, a reduction of one-fifth the area of the foul-air outlets for the size of fresh-air inlets has proved sufficient for inflowing fresh air.

In some of the methods of ventilation, it has been found that, by making the aggregate area of the outlets that remove the vitiated air larger than the fresh-air inlets, the dangerous effects of cold draughts have been avoided.

A Waltham, Mass., primary school-house, a wooden structure two stories high, contains six rooms, and is warmed by furnace heat. A room for fifty-six pupils has an area of 11,760 cubic feet. The air is admitted to the room at the inner wall 8 feet above the floor, through an opening with an area of 4.16 square feet. The air is removed from the room *through two openings*, and at the floor level, each *with an area of 2.50 square feet*, each pupil receiving an air supply of 50 cubic feet per minute without any perceptible draught.

From the above computations we are enabled to establish the ratio between the number of persons occupying a room and the area of the openings by which the room is to be ventilated. By the use of mechanical means in methods of ventilation it will be seen that the size of the openings for fresh and foul air ducts can be materially reduced. For example, the Brookline, Mass., town hall has recently completed a system of ventilation which has given excellent results; this audience-room having an area of 288,020 cubic feet, the seating capacity of which is one thousand persons.

The total area of fresh-air inlets in the clear is 19.55 square feet, represented by nine openings averaging 2.44 square feet. The total size of the foul-air outlets in the clear is 28.33 square feet, represented by nine openings averaging over 3 square feet. The metal ducts from the hall, with those from other sections of the building, are connected with a chamber in the attic 11 feet 5 inches long, 10 feet wide and 5 feet deep, through which the air is exhausted from the hall by means of a fan, 6 feet in diameter, of the A. Hun Berry pattern. This is operated by an electric motor, belted to an Evan friction-cone pulley, regulated at the present time to run the fan two hundred and fifty revolutions per minute; and it can be so adjusted as to operate the fan at any speed to within a reasonable number. All the machinery, together with the fan and air chamber, is suspended from the roof trusses, padded with rubber to deaden the sound caused by the running of the motor and fan. From the base of the hall there are carried away 8,000 cubic feet of air per minute, changing the atmosphere of the room about once in thirty minutes, and this without the use of ventilators in the ceiling. Should it become necessary to remove the air quicker, then these additional openings can be brought into use, and with a velocity of 600 feet per minute the fan will remove 17,000 cubic feet of air per minute.

As a rule, in our public halls, audience-rooms and schoolhouses, the fresh air as it enters the room is warmed by furnaces or steam heat. Whatever system is adopted for steam or furnace heat, we should not forget that the upright shaft is one of the most important factors in obtaining successful results, for the removal of the vitiated air, and also to make room for the warm, fresh air to enter the openings intended for its use.

The air thus warmed, entering through inlets properly located, will circulate through the room, and the bad air is drawn to the bottom of the warm ventilating shaft. Let me repeat that the best results have been obtained where foul air has been taken from the floor level instead of the walls or ceiling of the room, for then the cold air that has accumulated will be removed, and a more equable temperature in all parts of the room be established. Coils of steam pipe or furnaces in basements, with an ample supply of fresh air passing around them, and conveyed by pipes or ducts, of sufficient size, to registers ample to admit a large volume of air at a low degree of temperature, thus avoiding high velocity and the burning out of the vital qualities of the pure, fresh air. It should also be attempted, when practicable, to place all fresh-air inlets 6 or 8 feet above the level of the floor, and in the walls central in the building. Warming by steam radiators (direct heating) in the sides or in the centre of the room, making no provision for the admission of pure air or the removal of foul air, is the worst form of all warming apparatus. The heating of ventilating shafts by coils of steam pipe or by stoves has been found all that was required to secure the removal of vitiated air from the rooms to be ventilated. An ordinary chimney used for a ventilating shaft surrounding the smoke pipe of the furnace has often proved valuable in ventilating.

Cold-air shafts are not to be relied upon. In estimating the amount of draught in the shaft, the height of the shaft and the amount of heat must be determined. Ducts for the removal of vitiated air in different stories should not open into the same ventilating shaft, as it has been found that under various circumstances the foul air from rooms below will enter.

The question will undoubtedly be asked, What should be the rule in estimating areas of outlets for the removal of vitiated air in occupied apartments? That must depend on the number occupying the room. If each individual requires 30 cubic feet of air per minute, this would make 1,800 cubic feet per hour for each person. With this minimum basis of 1,800 cubic feet per hour or 30 cubic feet per minute for an audience-room, the seating capacity of which is one hundred, the air moving at the rate of 5 feet a second, it would require a ventilating shaft the area of which would be 10 square feet. If the hall or audience-room will seat one thousand, it would require an area of 100 square feet, represented by 40 foul-air outlets, 2½ square feet each, or 10 of 10 square feet each.

In calculating the rate of removal of vitiated air from any room, not only the height of the room, but the total height of the column of heated air, must be considered. If the ventilating duct or flue passes through another room, or over the room to be ventilated, before it is carried to the atmosphere outside, the total height from the floor of the room to the top of the shaft is the effective height of the column of heated air. If the duct or flue is placed horizontally, this additional length should be calculated, as in all cases it increases the friction and modifies the result. The friction caused by horizontal flues or ducts becomes a very important element in reducing the velocity of the discharge of vitiated air.

How large must the shaft be? This depends on the degree of heating and the height of the shaft. If you multiply the square root of the height of the shaft by the square root of the difference between the temperature of the air outside and inside, and then divide by four, this will give the rate of movement of air per second.

Learning the number of cubic feet of air vitiated, as well as the rate the air is made to move in a given time and place, and the rate the air is spoiled by respiration, the area of foul-air outlets can readily be determined.

A MODEL SCHOOL-HOUSE.

The Salisbury Street school-house, recently erected at Worcester, is assuredly a notable building; not only has it a handsome exterior, but indoors it is remarkable for the admirable manner of construction and finish.

The grand plan of the building is that of a Greek cross, modified by the addition of the tower on the south-east corner. From the outside it is easy to see that all the rooms are well lighted. The dormer windows are a tasteful addition to the building's good looks.

The main entrance to the building is from Salisbury Street; and, passing up the broad granite steps, under the carved portico, the visitor is ushered into the entrance hall, which is fourteen feet wide, extending to the other side of the building.

Turning at once to his right, he enters the first-floor tower room, which is the principal's private domain. It is suitably furnished, and here is the annunciator for the electric bells, of which there is one in every room in the building. Just beyond the principal's room, down three steps, is the neat little lavatory and closet for the teachers. Over this a flight of stairs rises to the next floor.

On the east side of the building are two rooms, each twenty-eight by thirty-two feet, all the school-rooms being of that size, and fitted with seats for fifty-six pupils, plenty of spare room being left. Each room has a large book-case, with glass doors, built into the wall, in a convenient corner.

Of the general finish it is possible to speak of all as one. The floors are of southern pine, and on the stairways it is to be noticed that the broad treads are two inches thick. The stairways are all of open construction, handsomely finished. The finish of the rooms and the walls is of western brown ash. The ceilings are especially attractive. They are of metal, the centre being corrugated, with an embossed border and cornice, and mouldings. They are very handsome. The blackboards are genuine slate blackboards, three-eighths of an inch thick. There will be no repainting, no plaster dropping out, no holes punched in them, no general dinginess. The slate may be washed with water, if desired, and kept perfectly clean. In each room is a commodious closet for the personal use of the teachers.

The first room on the east side is designed for a grade 1 school. The second room is also a grade 1 room. Going back to the entrance, to the left is the grade 8 room. On the west side, the first room, corresponding to the first room for grade 1, is for grade 3. The next room is for grade 2.

This accounts for the first-floor room. In the centre of the building, it should be noted, is a large hall, 30 by 45 feet, into which all these rooms open. At the rear, on the side not occupied by school-rooms, are hallways, one on either side of the building, with stairs leading to the basement and to the second floor, and commodious, splendidly lighted dressing-rooms. Every part of the building is well lighted, in fact, — most of the school-rooms having eight, some seven, large windows; all the floors have large transoms.

Going to the second floor, by one of the three stairways, it is found to be a counterpart of the first. Beginning at the front of the building, to the left is the room for grade 9. This room has pupils' desks with lids, all the others having open desks. Following on this side, the next room is for grades 7 and 8. Its mate is for grade 6. At the rear are the dressing-rooms, on the same plan as below. Then, over the grade 1 rooms are the rooms for grade 5, at the north-east corner, and for grade 4, at the south-east corner.

Its system of ventilation seems to be as nearly perfect as human ingenuity can make it. Worcester may well challenge any other place in the world to produce a school building better warmed and ventilated.

The basement of the building has a floor of concrete and whitewashed walls. It is a clean place, and will make a good play-room. On the east side is the boys' sanitary, and on the west is the girls'. The arrangement is admirable. The closets have automatic traps and the best of plumbing, and the best care is taken for ventilating. All the air passes from the sanitary rooms into a large stack, at the bottom of which a small fire is kept constantly burning.

But of the arrangement for warming and ventilating the school-rooms it is especially desirable to speak. The system used is known as the "Smith system of school-house ventilation," which O. S. Kendall & Co., the well-known local plumbers, now control. This system was adopted for the Salisbury Street building, in accordance with the plans of Fuller & Delano, the architects of the building, who recommended it above all others.

Briefly, the plan is this: The fresh air enters the building by large ducts, and an automatic damper so controls it as to prevent the entrance of too much air in very windy weather. It enters brick rooms, passing upward, then over coils of steam pipes, so that all the heating of the air is done before it enters the school-room. The inflow is so arranged that by means of a small lever the teacher in any room may shut off the hot air, allowing the chilled only to enter, or *vice versa*, so that she can control the temperature of the room perfectly. The volume of air is sufficient to change the air in the room once in seven minutes. At the floor of the room is a large opening — large in order that no perceptible current may be created — for the exhaust duct. This duct passes down to the cellar, where, with the other similar ducts from other rooms, it enters a room from which it is expelled by a large fan, six feet in diameter, into a huge stack, eight feet in diameter, which extends to the top of the building. It is of brick, and wholly open. The fan is operated by an eight-horse-power engine and boiler, entirely separate from the boiler for heating. Two fifty-horse-power boilers supply the steam, which heats the air before it passes through the ducts to the rooms. These ducts have an opening about midway of the wall of the room. In the halls are placed radiators.

By the use of city water, the turning of a faucet operates a damper which shuts off at once all cold air from entering the building. This is for use in very severe weather, especially at night. The air ducts for the ventilation of the building and the stack are, by the way, entirely separate from the appliances for ventilating the sanitary rooms.

The architects of the building, Messrs. Fuller & Delano, under whose plans the entire details were constructed, have shown here their ability to plan a splendid structure. It reflects credit upon the city, as well as upon themselves.

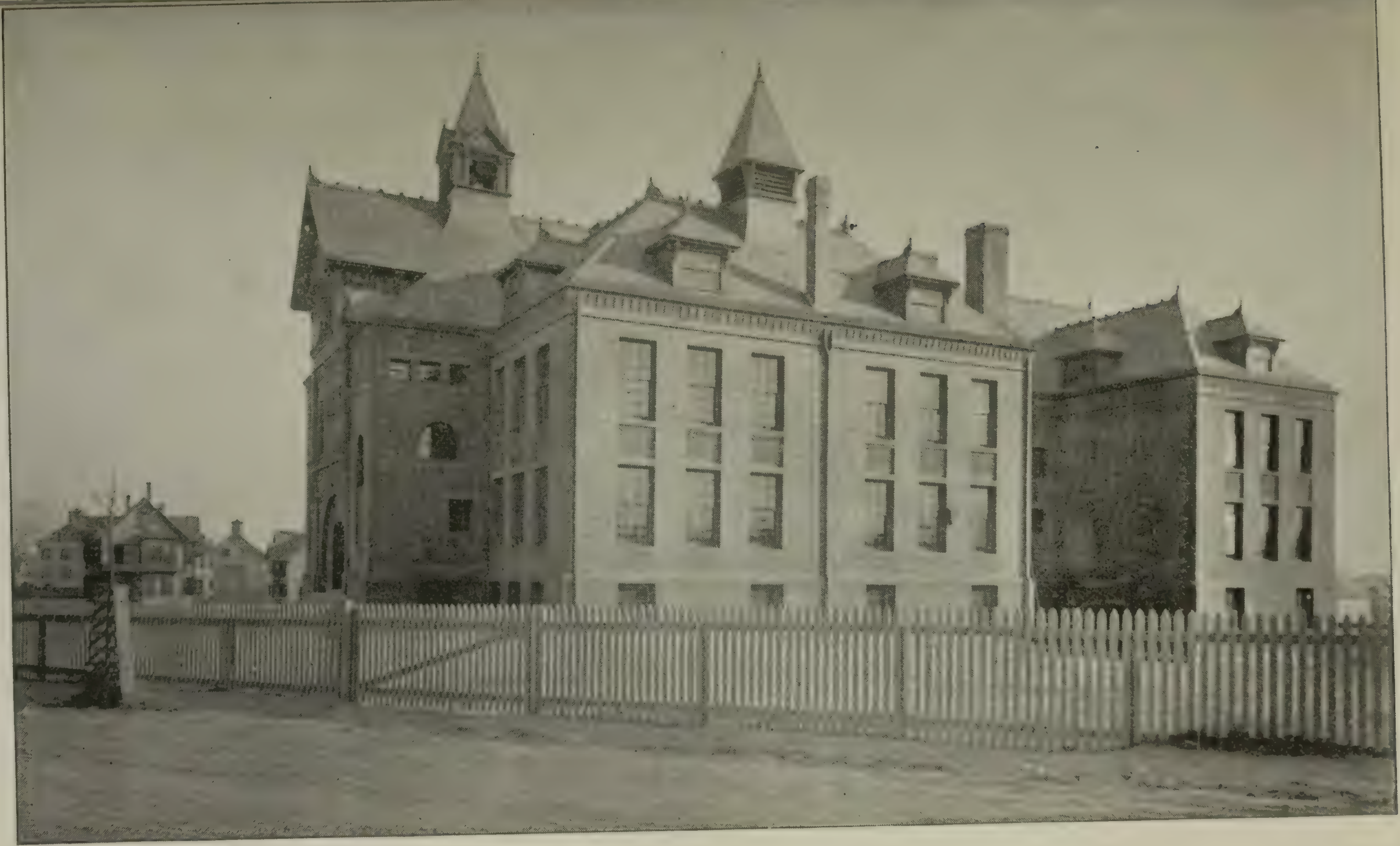
It is well worth a visit to the new school-house, to see this system in operation. It works to a charm, and the authorities in charge of the city's public buildings are delighted with it. Visitors have come from Pennsylvania, New Jersey, New York and elsewhere, and have gone away with expressions of admiration. Much credit is due to Inspector Dyson of the department for careful oversight during the construction of the building, and in the matter of sanitation. Every detail that would secure safety in case of fire was carefully provided for, and his experience in methods of ventilation aided in the successful results obtained.

The test made at the Salisbury Street school showed that the average amount of air supplied per pupil was 36.3 feet per minute; the average amount of air removed per pupil was 39.7 feet per minute, with an outside temperature of 52°; temperature of air at inlet 96°, at the outlet 69°, with an average of 71° in the room. There is no trouble in removing from 2,000 to 2,300 cubic feet of air per hour for each pupil or seat in any room in this building. The average for three tests made was 7.6 parts of carbonic acid gas in 10,000. So far there has been no complaint; but of course the successful operation of the system rests mainly with the janitor.

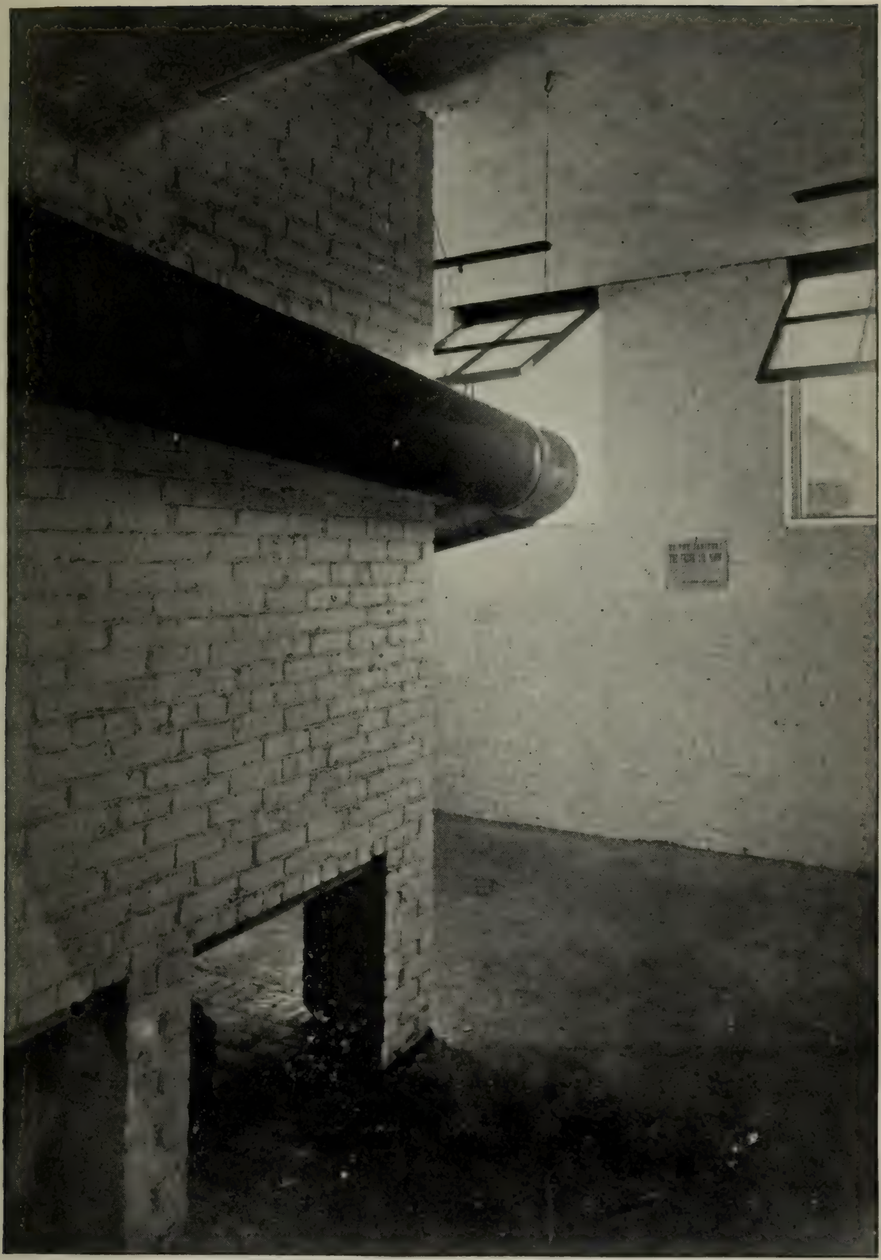
Highland School, Lowell, Mass.

The Highland school at Lowell is a comparatively new building, having been built in 1878, and was considered one of the best-ventilated schools in the city. There are two well-located ventilating flues from each room, each flue being 22 by 26 inches. These flues run to a central shaft through the roof. They are not heated, depending entirely on the natural movement of the air. As the building is heated by direct steam, the supply of fresh air must of course come mainly from the windows and doors. During the past year an additional building has been erected in the rear of, and connected with, the main building. This addition contains four rooms, and is heated and ventilated by one of the late improved systems.

To test the respective merits of the new and old systems, I requested the master to keep the windows and doors

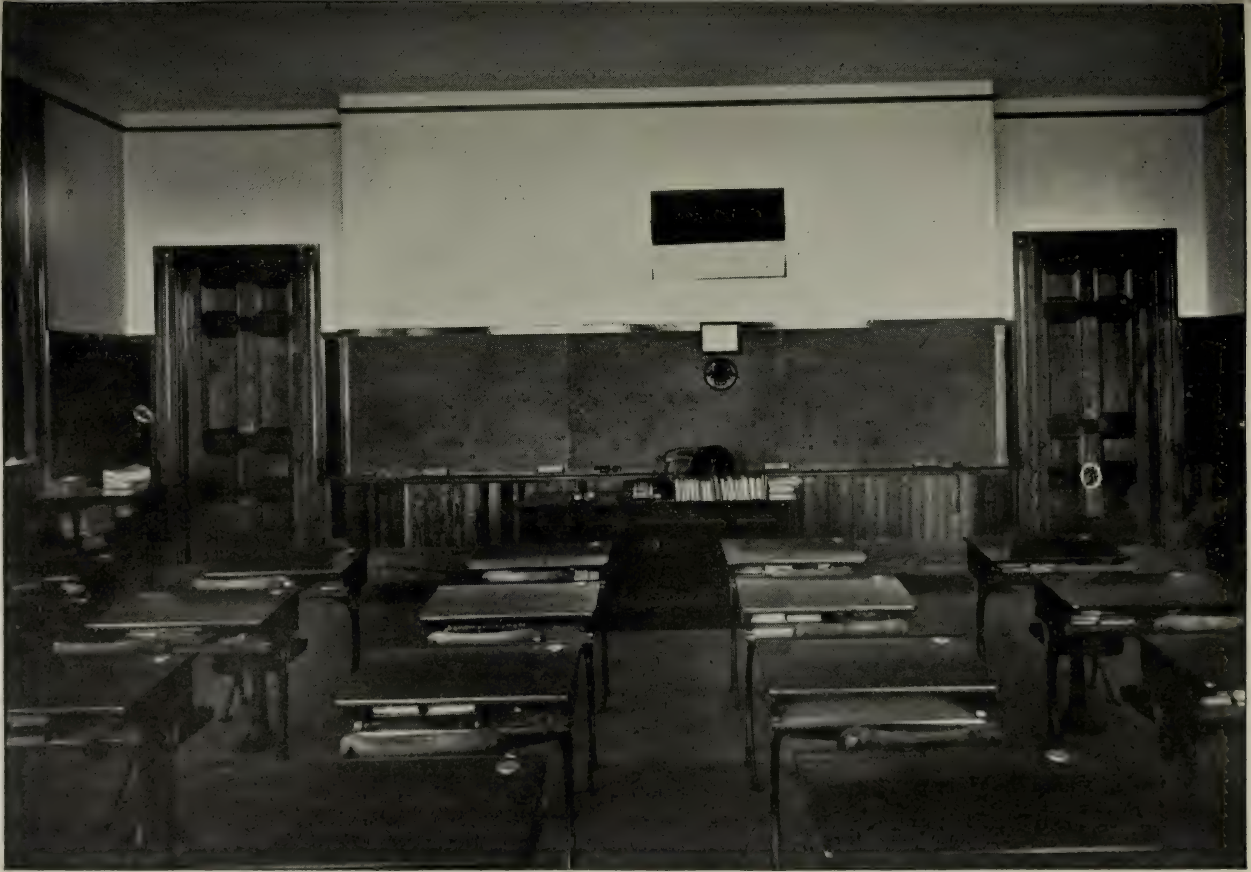


HIGHLAND SCHOOL, LOWELL.



COLD AIR CHAMBER.

HIGHLAND SCHOOL, LOWELL.



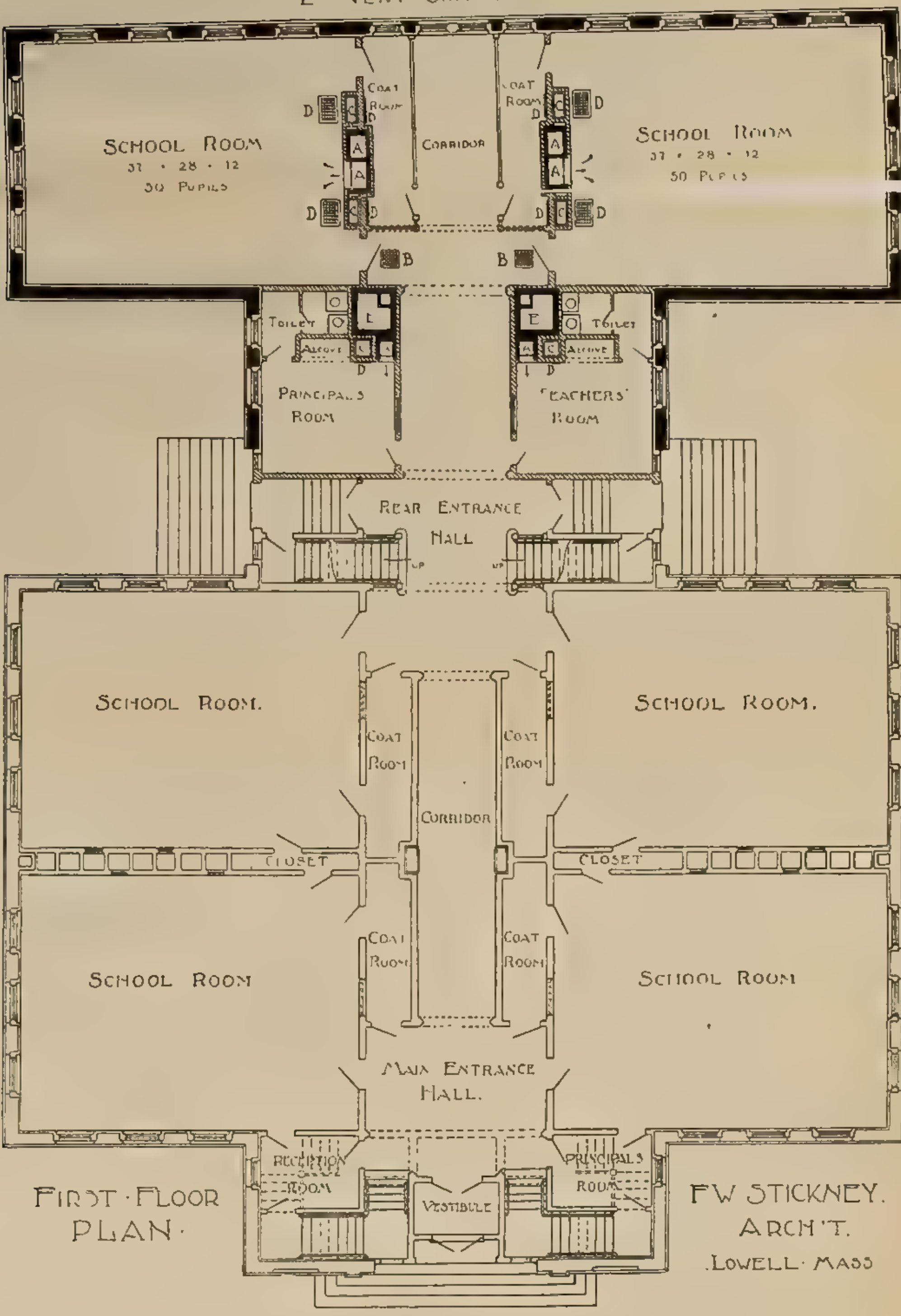
INTERIOR OF SCHOOL ROOM, SHOWING LOCATION OF HEATING AND VENTILATING DUCTS.

HIGHLAND SCHOOL, LOWELL.

One Heating Duct in Wall, Two Ventilating Ducts in Floor, one each side of Teacher's Desk.

HIGHLAND · SCHOOL ·
· LOWELL, MASS. ·
· ADDITION · SHOWING · SMEAD · SYSTEM · OF · WARMING · AND · VENTILATING ·

A WARM AIR FLUE
B WARM AIR REGISTER
C FOUL AIR FLUE
D FOUL AIR REGISTER
E VENT SHAFT



The new addition to this building is heated and ventilated by the Smead system of warming and ventilation.

Two Smead furnaces are placed in a cold-air room, about twenty feet square, directly under the centre corridor of the addition. These furnaces are cased in brick, and stand one on each side of the room, adjoining the vertical warm-air flues.

The air supply is taken into this cold-air room through three full-sized windows, so arranged as to easily regulate the amount of air to be received into this room. From this room the air passes directly around and over the furnaces into the vertical warm-air flues, or directly into the flues, and thence to the rooms, without passing over the furnaces, by closing the valve in the warm-air flue, which is controlled by the teacher.

The vertical warm-air flues are built of brick, and extend from the floor of the cold-air room, in the basement, to the ceiling of the room they supply, each room having a separate flue.

The warm air is delivered to each room through an opening in the vertical flue about eight feet above the floor of the school-room.

The foul air of the first story is drawn off through two registers in the floor, located on the same side of the room as warm-air flues, and as shown on plan (marked D D), and drops into a brick gathering room directly under these registers, and separated from the cold-air room by a brick wall.

The foul air of the second story is drawn off through two registers placed directly over the foul-air flues shown on plan (marked C C).

These foul-air flues are made of metal, and lead directly down into the brick gathering room in the basement.

From the brick gathering room the foul air passes through a horizontal conduit into the ventilating shaft (marked E.)

The ventilating shaft is built of brick, and extends from the bottom of the conduit, under the basement floor, to a point several feet above the highest point of the roof, and is open at the top.

Directly over the foul-air conduit, at its entrance to the ventilating shaft, is placed a small circular heater used for heating the foul air as it enters the shaft, to increase the velocity of the upward current.

This arrangement affords the simplest and most direct passage for the fresh air from the outside of the building to the furnaces and thence to the school-rooms, and for the foul air from the school-rooms to the gathering room, and thence to the ventilating shaft.

All the flues for each portion of the building, both for fresh air and foul air, are grouped on one wall, making it an economical arrangement, both in the amount of room taken up and the expense of building, and is also a most effectual arrangement for accomplishing good results.

By exhausting the air at two points in the floor, near the same wall in which the delivery flue is located, the circulation reaches every part of the room, and a large amount of air can be drawn off without any unpleasant currents

closed for one hour in two of the rooms in the old part, and also to be careful to keep two rooms in the new part in the same condition, on the afternoon of November 5. By some mistake one of the rooms in the old part was not closed as long as the other, so that there is considerable difference in the results in these two rooms. The rooms in the new part were, however, kept closed as requested. In fact, the windows in this part are never kept open during the session of the school. The session began at 1.30 o'clock, and at 2.30 samples of the air were taken by Professor Irish of the Lowell high school, with the following results: In room No. 3, old building, there were found 17.17 parts of carbonic dioxide in 10,000 parts of air; in room No. 4, old building, there were 30.58 parts in 10,000; in rooms No. 5 and No. 6, new building, there were 7.25 and 9.60 parts, respectively, of carbonic dioxide, in 10,000 of air. The amount of air coming into the rooms in the new building, from the furnaces, was very large, averaging over 45 feet per minute per capita for the seating capacity of the rooms. The temperature of the outside air was 50°, and that of the in-coming air 70°; the rooms averaged 68°.

STOUGHTON SCHOOL (DORCHESTER DISTRICT), BOSTON.

This is a two-story wooden building, containing eight school-rooms, and at the time of inspection three hundred and seventy pupils. This school has at times been closed on account of sickness among the pupils; but a thorough inspection some two years ago revealed nothing that would be likely to cause any particular disease, except that the ventilation was about next to none, — two ducts, 24 by 24 inches, entering one 30-inch outlet in the attic, and no movement of air through them could be noticed. This building has recently been provided with the Fuller & Warren heating, ventilating and sanitary system. At a late examination I found each teacher and pupil receiving an average fresh-air supply of 38 cubic feet each minute; and in a room thought by the master and other teachers to be much below the average of the others, I found the teacher and pupils receiving an average of 30 cubic feet per minute, while a test of the air by Wolpert's air tester showed but 8 parts of carbonic acid in 10,000; and, on a close examination of the closets and urinals, no unpleasant odors could be detected.

MATTAPAN SCHOOL, MILTON.

This is a two-story, two-room wooden building, formerly heated by a furnace having a cold-air box about one foot square, the warm-air pipes entering the room at the floor, and with no means of removing the vitiated air. During the past summer the building has been renovated, the walls back-plastered, — an excellent feature in a wooden building, — and a complete system of heating and ventilation placed therein. The furnace consists of a Gold's hygeian heater, with a large radiating surface. Each room has a seating accommodation for forty-two pupils, giving each an average floor space of 29 square feet, and a cubic air space of 380 feet; this is providing the seats were all occupied at one time. At the time of examination I found the temperature of the room was 70°; temperature of the warm air entering the building, 90°; temperature of air removed through the exhaust shaft, 70°. Amount of air supplied for each pupil, providing every seat was occupied, first floor, 40 cubic feet; second floor, 48 cubic feet. At the time of examination that number was not present, and Wolpert's air tester gave 6 parts carbonic acid. There was no perceptible foul odor in either room.

In concluding this portion of my report, it is gratifying to be able to state that, in every school building ventilated under the supervision of this department, excellent results have been secured. It requires but a visit to the many school-houses so ventilated, to convince even the most skeptical that a more humane legislation in the interest of those especially affected by it has never been placed upon our statutes than chapter 149 of the Acts of 1888, the enforcement of whose provisions is a part of the duty of the inspectors of this force.

LOWELL, MASS, NOV. 15, 1890.

HON. RUFUS R. WADE, *Chief Inspector of Public Buildings.*

DEAR SIR: — It is certain that State inspection has stimulated improvement in the ventilation of school-houses in Lowell. Of course the high standard of the State officers adds to the cost of new school-houses. Enough good air in-doors does cost something. Under the pressure applied by your department, the results already attained have been wonderfully good.

Yours truly,

GEORGE F. LAWTON,

Superintendent of Schools, Lowell, Mass.

LEOMINSTER, MASS., Nov. 19, 1890.

RUFUS R. WADE, Esq., *Chief of District Police.*

DEAR SIR: — In reply to your inquiries, I am glad to inform you that the changes made last year in the school buildings of Leominster are satisfactory in every respect. The proper ventilation of school-houses, especially where children are gathered in large numbers under one roof, is a subject of great importance and general concern. I have believed this for many years, but never realized it as I have since the new heating and ventilating systems were introduced here. The improvements ordered by Inspector Dyson cost a large sum of money, but they were complete and thorough in every respect. At first many citizens were doubtful concerning the necessity or advisability of making such extraordinary expenditures for changes which might prove theoretically beneficial but practically of little worth. Now, all, who know anything about it, are willing to acknowledge that practical advantages have accrued, and that the changes are worth more than they cost. Pure air gives us better teaching, clearer thinking and healthier students. The influence in education of clean, neat and effective sanitary arrangements is seldom appreciated, and cannot be measured.

Yours respectfully,

I. FREEMAN HALL.

TURNER'S FALLS, MASS., Nov. 19, 1890.

RUFUS R. WADE, *Chief of Massachusetts District Police.*

DEAR SIR: — The act to provide better ventilation and sanitary arrangements, as applied to school-houses, has been tested in this place, and thus far its enforcement has given good results. It is an unquestionable fact that the ventilation, and especially the sanitary appliances, in many of our school-houses, are bad. The health and comfort of our school children is of the utmost importance, and any law tending to increase them must be looked upon with favor. Systems of heating, ventilating and sanitary arrangements, as ordered by the Massachusetts District Police, are in use in one new and three old school buildings in this town, and thus far have given good satisfaction. From a study of all the facts that have come under my observation, I believe that the law in question was greatly needed, and that its enforcement will be of much benefit to the people of this State. But, in view of the fact that the carrying out of the provisions of this act entail upon many towns what to them is a very heavy outlay of money, and inasmuch as we are not yet certain that we have the best methods of doing the work, I believe that the demands made upon the towns should not be too burdensome, and that plenty of time should be allowed to test the utility of the changes as they are made.

Very respectfully,

C. C. MESSER, *School Committee.*

The following editorial, taken from the "Toronto Mail," Canada, Nov. 15, 1890, is a gratifying recognition of the work this department is endeavoring to perform: —

A PLEA FOR FRESH AIR.

During the balmy days and nights of summer there is not much need to expatiate on the benefits of fresh air. Windows and doors are thrown open, and everybody revels in as much of the atmosphere as he can get. There is free egress for the products of bodily combustion thrown off by the lungs, and old and young, as a rule, enjoy the vitality that a pure atmosphere supplies. It is when the doors and other apertures of our houses and places of business begin to be tightly closed up, that it is necessary to remind people that carbonic acid gas is prejudicial to the human subject, and that a free supply of fresh air is necessary to a healthy life. In certain parts of Toronto of late years the danger has been — during the summer months — from impure sources of miasma without our dwellings. Now that the thermometer is beginning to show low readings, and the days are getting shorter, we have to prepare for foes from within. Some one has said that, generally speaking, a man's health depends on the distance from him of his next-door neighbor; which is another way of saying that air and space add to vitality and health. When the crowded state of some of our houses, schools, factories and other buildings is taken into consideration, it will be seen that the question of proper ventilation is a very important one, and worth more than a mere cursory comment.

At the fourth annual convention of the International Association of Inspectors of Factories and Workshops, recently held in New York, several very interesting papers were read upon the subject of the proper ventilation of schools and factories. Mr. Rufus R. Wade, the president of this association, contributed a paper containing some exceedingly useful remarks on the subject. He mentioned that the best authorities tell us that not less than thirty cubic feet of air per minute is required for each person, to maintain even a reasonable degree of purity. In air vitiated only by human respiration, double this amount is required to maintain an approximation of out-door purity. Taking this standard, it will be seen that a family party of six persons should have about three hundred cubic feet of fresh air per minute flowing through the room in which they sit. This means that, if they are sitting in a room fifteen feet square and of the ordinary height, the whole atmosphere should be changed about once every ten minutes. As the air is spoiled by respiration, it needs removing if the best conditions for health are to be attained. It needs but a moment's consideration to see that a large proportion of our houses are not constructed with a view to the best sanitary results in this particular. In houses heated by furnaces there is, it is true, a flow of pure, warm air into the respective apartments; but little care is taken to allow the egress of that which has passed through the lungs and become vitiated by carbonic acid gas. President Wade remarked that the worst form of heating was that where heat was supplied by steam radiators, but no provision was made for the escape of the impure air. The subject is one which deserves thought on the part of those who wish to have healthy homes. To men leading an active life, and spending a part of every day in the open air, a few hours' confinement is not of much consequence. But there are women and children who in the winter spend most of their time in warm, close rooms, breathing over and over again their own exhalations. It is not to be wondered at that they frequently succumb to the first attacks of any disease that happens to prevail.

OFFICE OF SUPERINTENDENT OF PUBLIC SCHOOLS,
492 MAIN STREET, WORCESTER, MASS., Nov. 21, 1890.

Mr. R. R. WADE, *Chief of District Police, Boston, Mass.*

MY DEAR SIR: — I desire to express to you my appreciation of the corps of the District Police inspectors in this vicinity, in the execution of the laws respecting school attendance, the employment of children in factories, and especially the improvement of school-house heating and ventilation. Largely through the attention given by them to this subject, many of our school-houses have been greatly improved. They have visited the schools, detected the faulty conditions and pointed them out, and made suggestions for their improvement; and this city has taken hold of the repairs with energy and zeal. Mr. Dyson, the local officer, has been of special service to us in this particular.

It should be borne in mind that school-house sanitation is yet in its infancy; the best way has not as yet been fully determined; and the expense of these repairs has been greater than it would have been if the best means had been determined by experiment. This is not the fault of the police; and they have been judicious in their requirements, in view of this uncertainty. Citizens inclined to complain of the expense of such repairs ought to remember that it is better to bear this expense than to confine the growing children in unhealthy rooms, where they will contract diseases which are liable to cripple their usefulness for life. I hope that this good work will go on till all the schools in the State shall be made comfortable and healthy.

Very respectfully yours,

A. V. MARBLE,

Superintendent of Schools.

It may be interesting to know that the inspection laws of this State are matters to which special attention has been given by government officials in foreign countries. The following letters received will show the interest felt in the enactment of laws of this State intended for the benefit of the industrial classes: —

IMPERIAL GERMAN CONSULATE GENERAL,
NEW YORK, June 27, 1890.

RUFUS R. WADE, Esq., *Chief of District Police, Boston, Mass.*

DEAR SIR: — In March last you were kind enough to send me a copy of your annual report for the year 1888, and also a copy of the proceedings of the second annual convention of the National Association of Factory Inspectors. I forwarded these publications to the German government, which now has requested me to procure another copy of these interesting pamphlets.

With anticipating thanks, yours respectfully,

A. FEIGEL,

German Consul General.

PERMANENT COMMITTEE OF THE CONGRESS FOR ACCIDENTS WHILE WORKING,
20 RUE LOUIS LE GRAND, PARIS, NOV. 12, 1890.

MR. RUFUS R. WADE, *President of the International Association of Inspectors of Public Buildings, Factories and Workshops of North America, 65 Bowdoin Street, Boston, Mass.*

MR. PRESIDENT: — We have received the report about the "National Convention of Factory Inspectors, held at Philadelphia, in 1887," and we thank you for this very interesting communication.

We have the honor to send you by this mail two volumes relating to the work of the "International Congress of Accidents while Working," at Paris, in 1887, and the first five numbers of the bulletin of the permanent committee.

We shall be happy if you will be so good as to continue to send us the annual reports of the "International Association of Inspectors of Public Buildings, Factories and Workshops of North America," which will be to us of the greatest interest.

Accept, Mr. President, the assurance of our high consideration.

T. Gruner, *General Secretary of the Permanent Committee of Accidents while workiug.*

An English paper, the "Economist Monthly Trade Supplement," published in London, Eng , says: —

> The inspectors of the factories in Massachusetts are also inspectors of public buildings, schools, hotels, theatres and places of public amusement; and it is their duty to see that all damage from fire, or from insufficient ventilation and other causes, is carefully guarded against. It has long been felt that our factory acts admit of some amendment in this direction, and it is understood that the home secretary, Mr. Matthews, has the subject at present in hand. We may suggest to him that he might obtain some useful hints from the statute book of the Commonwealth of Massachusetts.

Systems and Methods of Ventilation.

It has been the rule of this department to make the most thorough tests of the several systems or methods of ventilation that have been applied to school buildings, and to approve of those only that have been found to meet the requirements of the statute. The following description of some of the recent systems that have shown good results will no doubt be of interest to those having under their control buildings coming under the provisions of the law.

The Smith Separate-Flue System.

In Plate I. is shown a plan and two sectional elevations of the new system brought out this year by Mr. Fred P. Smith, C. E., in Worcester, Fall River and other cities in the Commonwealth. As Mr. Smith has heretofore shown excellent work in the State, as evidenced by the last report of this department, this new system is deemed worthy of the space we devote to it, since it is in so many respects a radical departure from familiar methods. Sufficient tests have already been made (see report of

Inspector Dyson) to prove that Mr. Smith's methods have been based upon scientific reasoning, rather than "guessing."

Referring again to Plate I., the plan shown is that of the first floor of an average twelve-room school building, with usual cloak rooms, teachers' rooms, etc. Four sets of flues are shown, and incidentally it is noticeable that no space otherwise valuable has been occupied by the ventilating flues. Considering the set of six flues marked A, B, of which a section is shown to right of the plate, Flue No. 1 is the ventilating flue from the underground duct leading to the sanitaries, and by it the sanitaries are ventilated separately from the rest of the system. The next flue to this ventilates our school-room on the first floor, with its cloak room. The next two flues convey warm air to each of two school-rooms on the first floor, and the foul air from the school-rooms on the second floor. The remaining two flues convey warm air to the second-floor school-rooms, and there stop off.

It will be noticed that, starting in the basement, in the closet vent flue is another flue or pipe, which, it will be seen, extends in this first flue up to just above the exhaust register for the foul air from the first floor in the adjoining flue. This inner flue is of metal, usually heavy copper, and extends from a combustion chamber called the "vent furnace." The length of this inner flue is proportioned to its probable temperature, and the volume of air it is to lift in the ventilating flue which it warms. In practice, the comparative length shown in the elevations, Plate I., has been found more than ample to secure the desired exhaust power. As before stated, when the inner flue, which we designate the "flue heater," has reached the first floor in the "closet vent flue," it then offsets into the next flue, which is "first-floor vent," just above the register opening. It offsets at this point, preferably, to admit of ready access for "cleaning out," a proceeding necessary once a year, there being provided at each offset a proper clean-out door. The "flue heater" extends in the "first-floor vent flue" the height of one story, making, usually, a length of 14 feet of flue, 8 to 10 inches in diameter, or equal to from 28 to 35 square feet of surface, which may be raised to any desired temperature, this being the ventilating power for the flue for one room. Having reached the second story, the "flue-heater" again is offset into the next flue, which exhausts the foul air from a second-floor room, and, after extending a proper distance in this flue, again offsets to the fourth flue, and thence to the atmosphere.

Plate II. shows the perspective of the building of which Plate I. is a plan, the corner being cut away to give a sectional view on the one side of the six flues considered in Plate I., and on the other side the exterior view of the set of flues, showing the loca-

VENTILATED BY THE SMITH MECHANICAL - EXHAUST SYSTEM.

PLATE I. Salisbury Street School, Worcester, Mass.

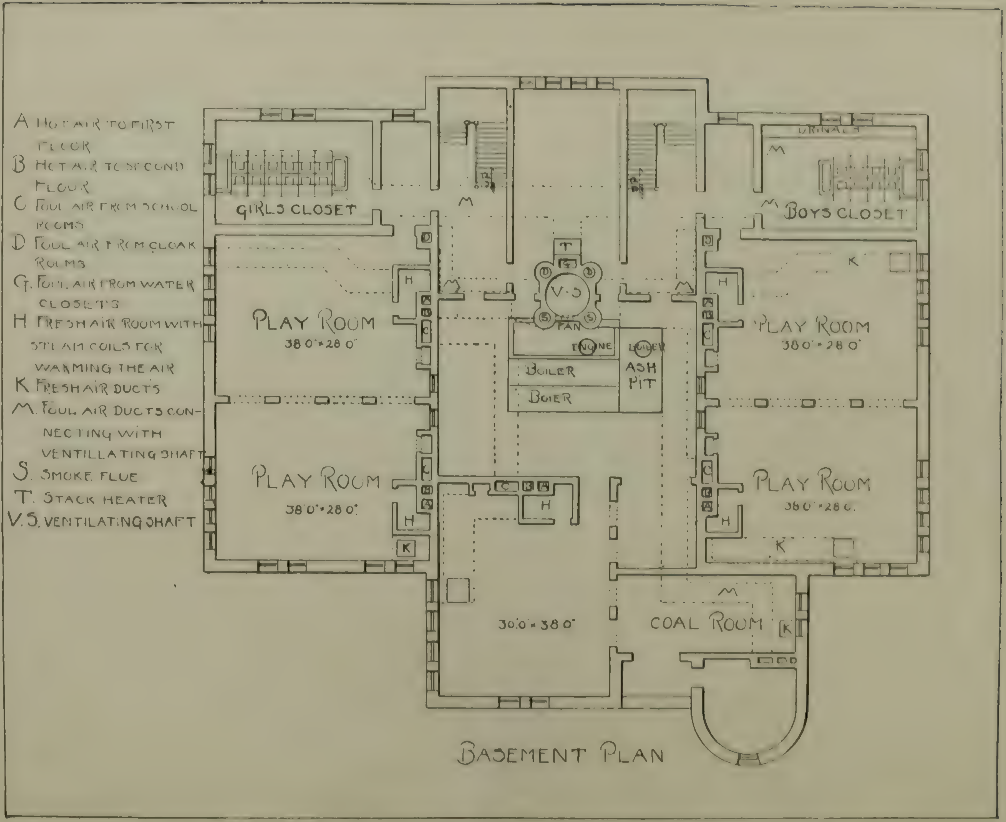
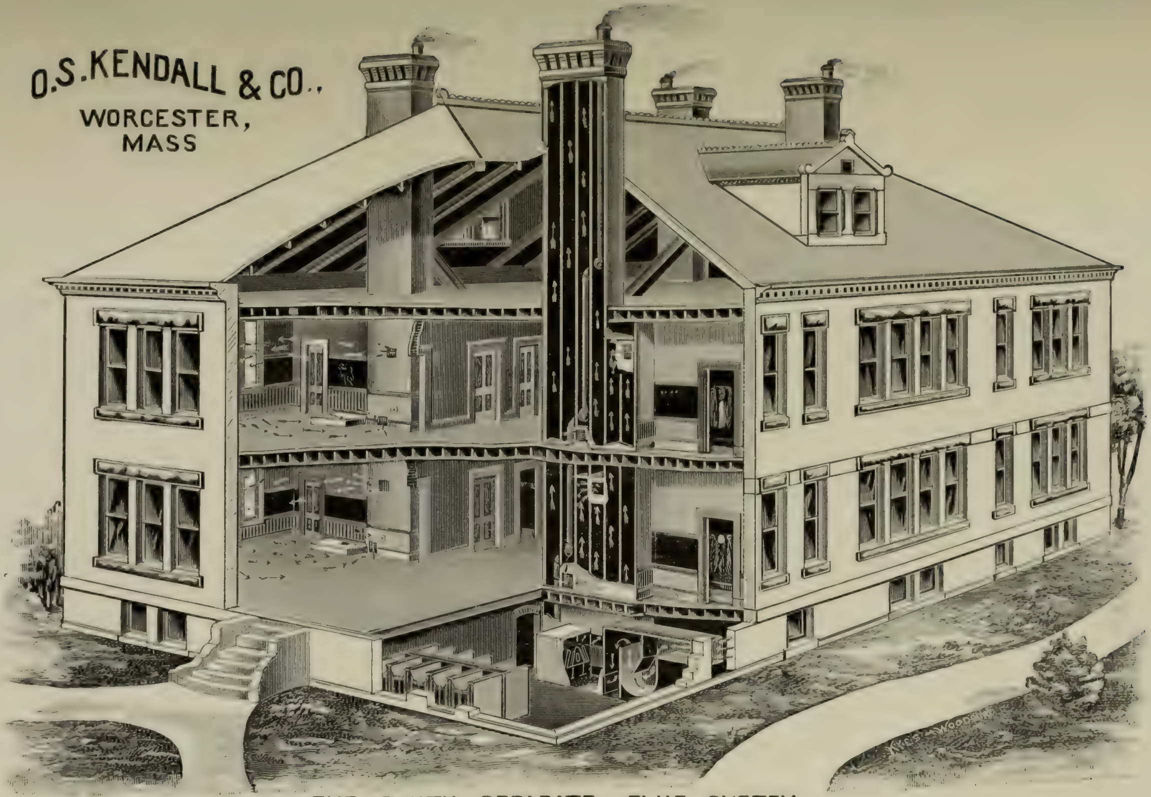


PLATE II. Salisbury Street School, Worcester, Mass.



THE SMITH SEPARATE-FLUE SYSTEM
PATENTS ALLOWED.
AS INTRODUCED TO EDGEWORTH, GRAFTON, HOLMES ST. AND SO. WORCESTER SCHOOLS, WORCESTER, MASS.

PLATE II.

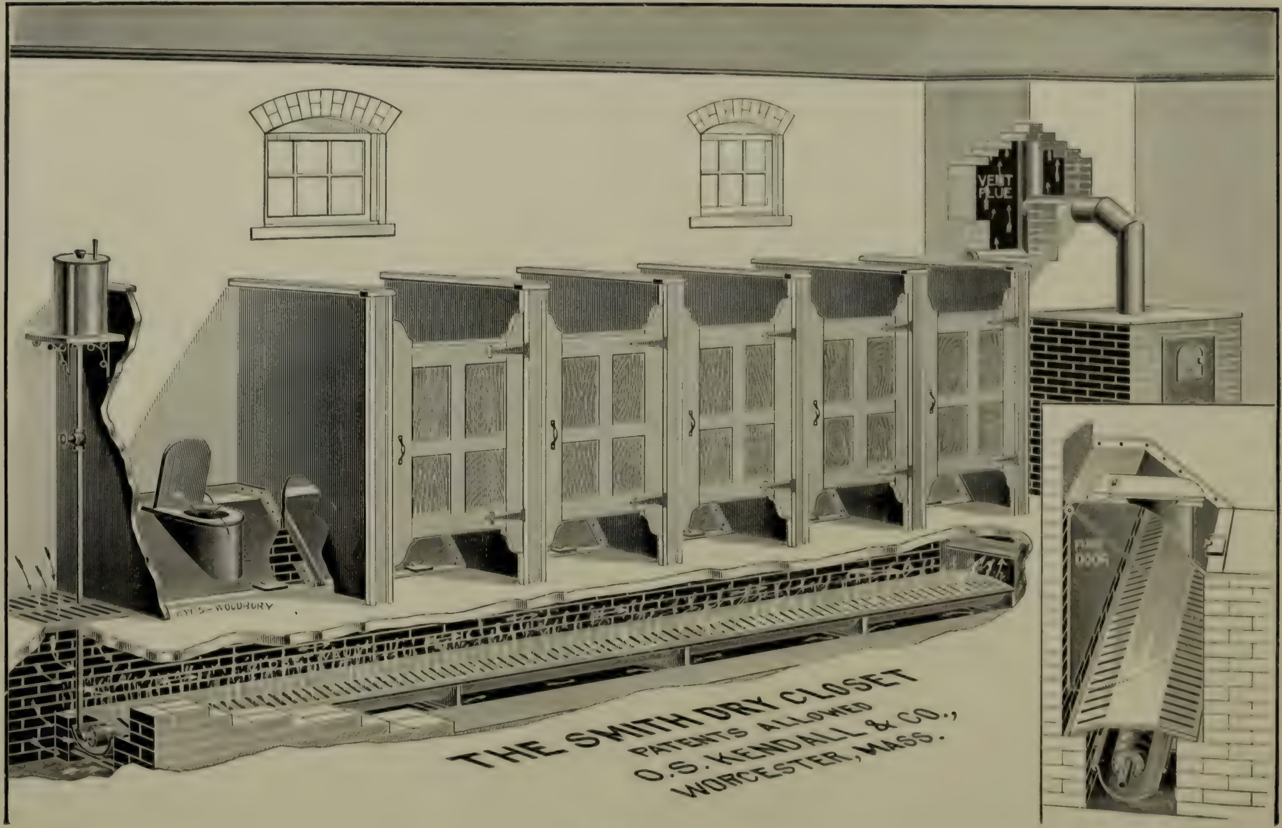

VENT FLUE
DOOR
THE SMITH DRY CLOSET
PATENTS ALLOWED
O.S. KENDALL & CO.,
WORCESTER, MASS.

PLATE III.

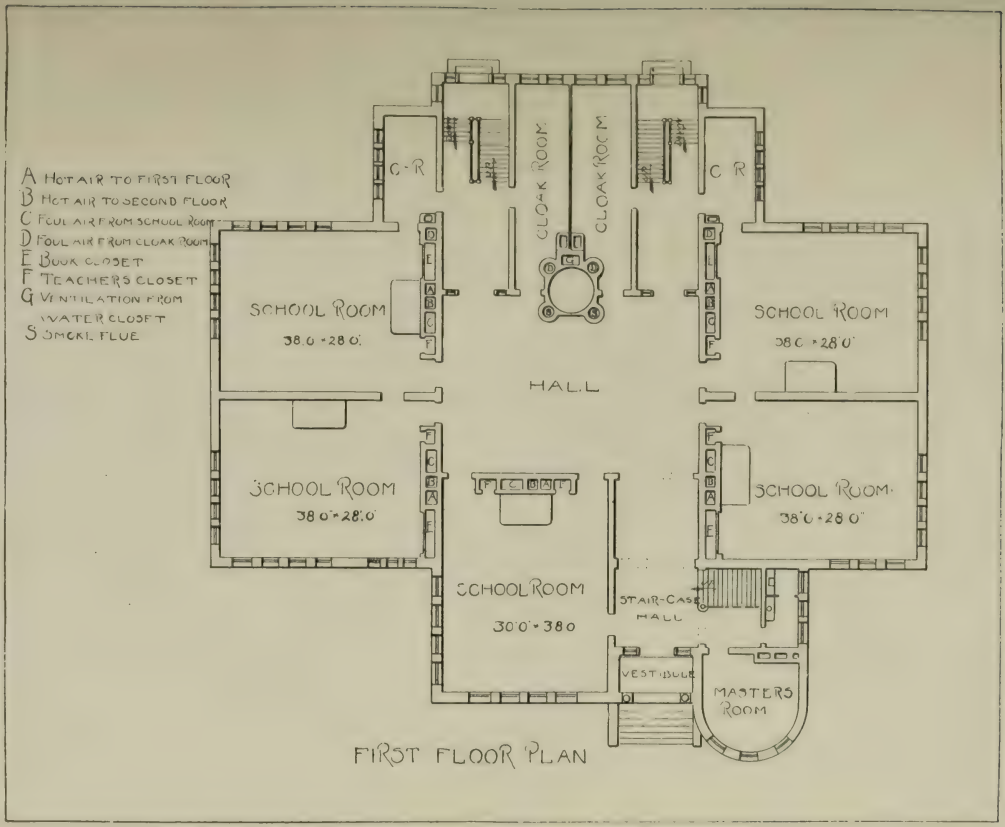


PLATE III. Salisbury Street School, Worcester, Mass.

EDGEWORTH STREET SCHOOL,

WORCESTER, MASS.

This building is one of the older school houses of the city, situated on high elevation, very much exposed. Was fitted with the Smith system, of which the following plates are descriptive, during the summer vacation. State Inspectors Dyson and White visited the building Dec. 2nd, and made an inspection, finding the following results ; the day being the first on which the mercury had reached zero, and the outside temperature at time of test being 14° F. with very strong wind blowing. Attention is called to the fact that in spite of the strong winds the velocity of the inflowing warm air was kept at the normal point by the Automatic Air-Valves.

"Average velocity of inflowing air, 350 feet per minute."
"Average volume of air supplied, 1520 cubic feet per minute."
"Average velocity of out-flowing foul air, 787 feet per minute."
"Average volume of foul air removed, 3148 cubic feet per minute."
"Average temperature of inflowing air, 98.5° Fah."
"Average temperature at breathing line, $67\frac{2}{3}$° Fah."

The enormous volume of air exhausted was due to the fact that the inventor of the system desired the Inspectors to witness the exhaust power of the apparatus, which will now be reduced to nearer the contract requirements. It is perhaps worth noting that the only ventilating power employed was heat which would otherwise be wasted, being the smoke and gases from the heating furnaces.

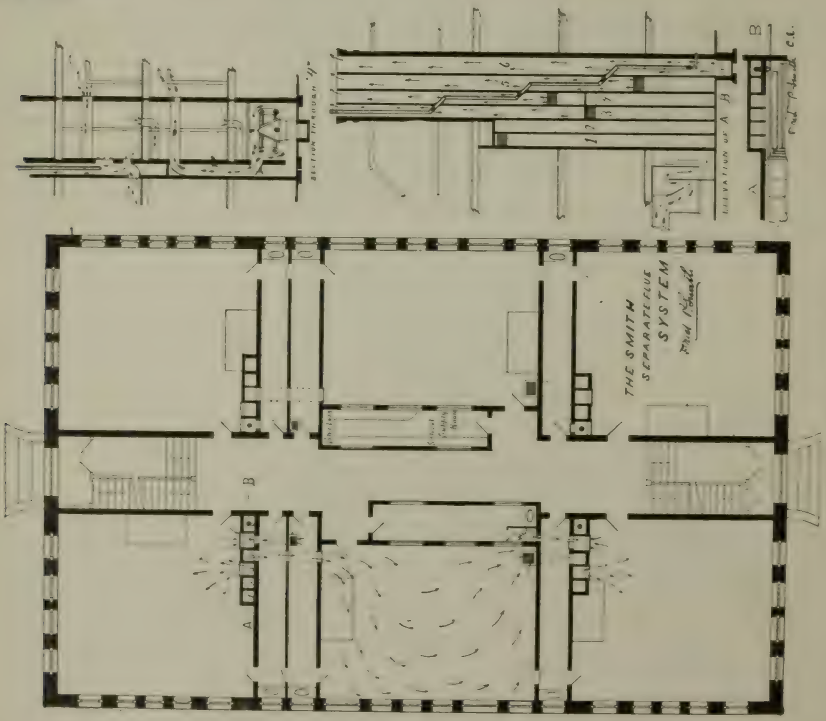


PLATE I.

tion of the inlet and outlet registers. A close examination of Plate II. will show the entrance of the fresh air to the building at an opening on the right, passing thence through the automatic air valve into the heating chamber, where the furnace is indicated. The passage of the warm air to the rooms is the same as in all the other systems employed by Mr. Smith, with the usual valves for controlling the temperature of the air by the teacher. The sanitaries are indicated in the basement, the connection to their ventilating flue being underground.

Mr. Smith claims for his new system several points, which we mention, leaving it to him to demonstrate how well they are established: —

First. That in this system, since each room has its separate flue, it is entirely independent of unfavorable conditions in other rooms, such as open windows, etc.

Second. That in the "common-stack" system an increase of ventilation from one room, such as frequently occurs during winds, is at the expense of some other room not exposed.

Third. That, under certain conditions, a common shaft may convey the foul air from one room into another.

Fourth. That the new system greatly lessens the friction which ventilating power is required to overcome, by carrying the vitiated air directly up and out, instead of down to the basement and thence out the common shaft.

Fifth. That the cost of mason work for the introduction of the system is at least forty per cent. less than by the common-shaft system, while the valuable space occupied is also much less.

The adjustment of the system is accomplished, if found desirable after trial, by cutting off, in such flues as work too strongly, such an amount of the surface of the "flue heater" (by covering with asbestos) as shall be necessary to reduce the power. It would appear, at first sight, that the heat of the flue heater would be greater than necessary at the bottom, and too little at the top, in the last flue; but the fact is, that Mr. Smith has guarded against that result so effectually that in every instance the top flue has worked the strongest. While the flue heater is really an extension of the vent furnace up through the several flues, it is also employed with furnace heating as the smoke flue from the furnaces, in which case the ventilation costs nothing, the ventilating furnace being used only while the heating furnaces are not running.

Plate III. shows the Smith dry closet, which consists of a fireproof vault under the range of closet seats, having near the bottom an iron grating to receive the excrement. The middle of these grates is solid, to protect from soiling the burner, which runs the whole length of the closets. This burner consists of a large galvanized-iron pipe, perforated, and covered with a thick covering of asbestos, which serves as a wick for the proper combustion of the oil which flows through the perforated pipe from any suitable tank. These closets are fully warranted for ten years, and are strongly covered by patent claims which have been allowed.

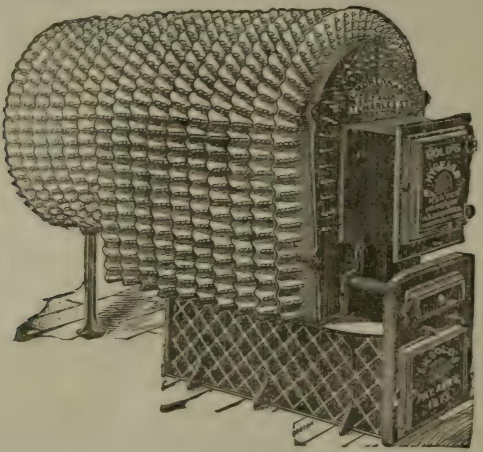
Plate IV. shows the Smith ventilated water-closet now in use in numerous schools in the State. They consist simply of a slate vault, with proper provision made for filling with water and emptying the same. They have no plumbers' joints, traps nor fixtures about them, and are ventilated the same as the dry closet. They are absolutely odorless when connected to a suitable ventilating shaft.

Plate V. shows the ventilated urinal, made with or without partitions, and guaranteed by the makers to be absolutely odorless, even without any flushing or washing.

Plate VI. shows the Smith air warmer, also the invention of Mr. F. P. Smith, C. E. It is made in any size required, but usually three sizes, having respectively 750, 1,000 and 1,500 square feet of heating surface.

Plate VII. shows the Smith air valves in several forms in which they are used. At the lower right-hand corner is the device (patented) by which the air is automatically taken from either of two directions, according to the direction of the wind.

C. M. Drennan & Co., System of Heating and Ventilation.



The Heater used.

This heater has the general form of a locomotive boiler, with fire box, the combustion chamber being made up of sections so

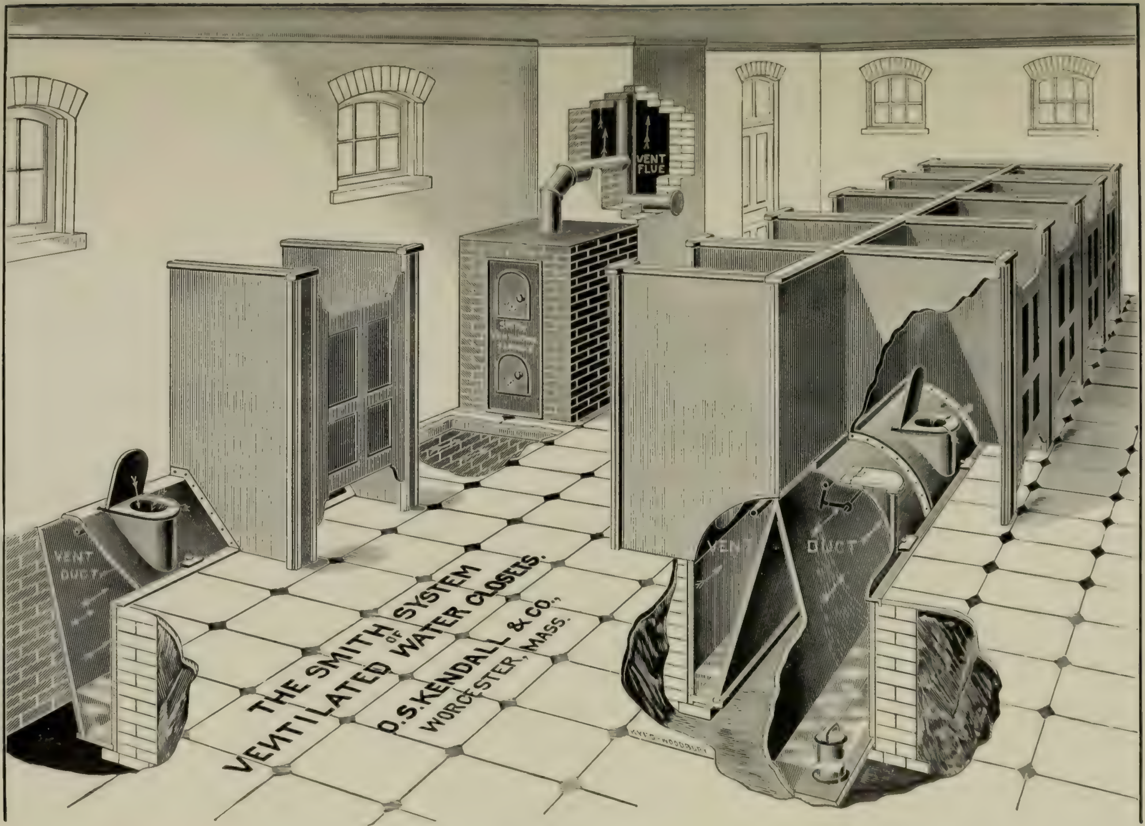

VENT FLUE
VENT DUCT
VENT
DUCT
THE SMITH SYSTEM of VENTILATED WATER CLOSETS.
O. S. KENDALL & CO., WORCESTER, MASS.
KYES-WOODBURY

PLATE IV.

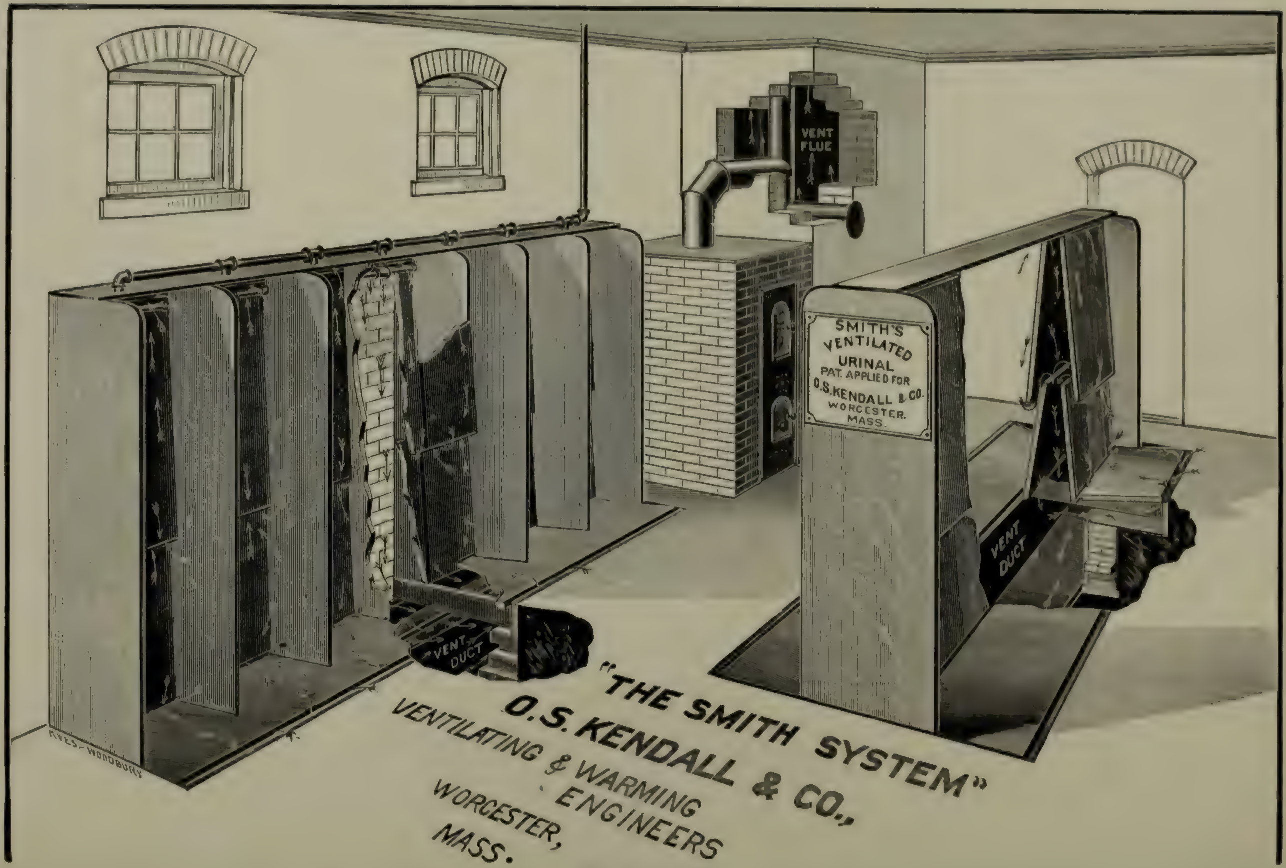
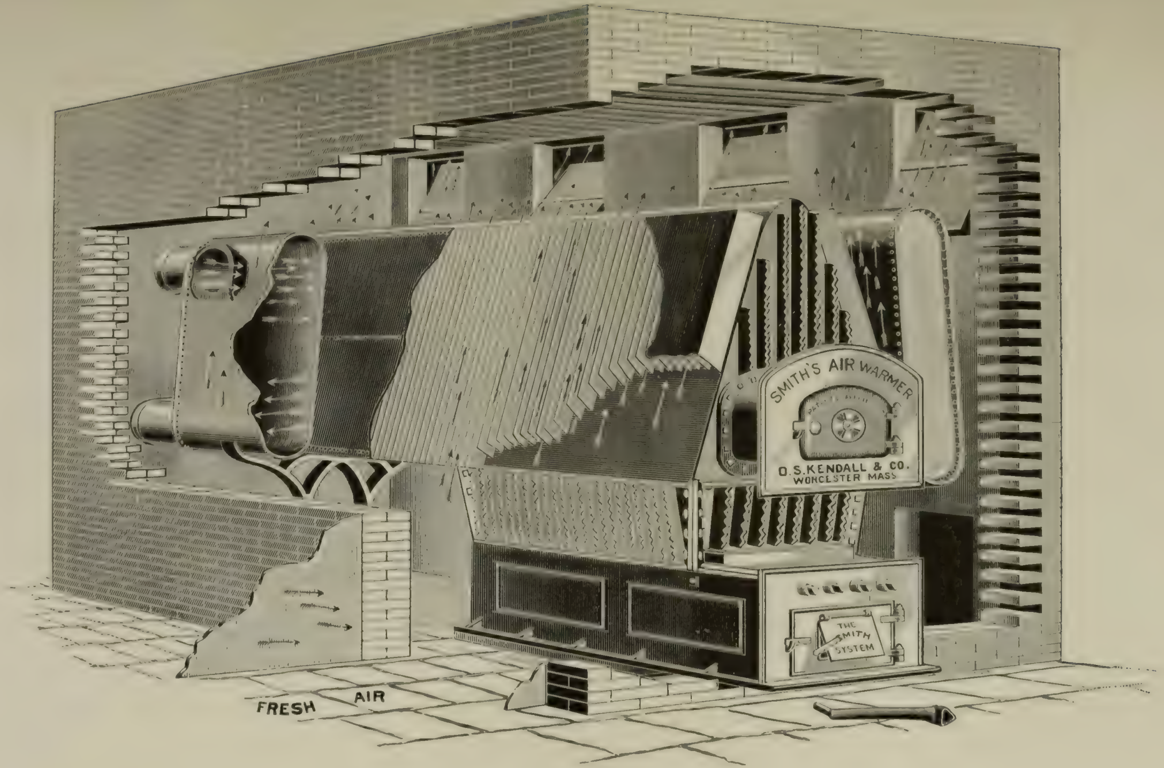

VENT FLUE
SMITH'S VENTILATED URINAL PAT. APPLIED FOR O.S. KENDALL & CO. WORCESTER. MASS.
VENT DUCT
VENT DUCT
"THE SMITH SYSTEM"
O.S. KENDALL & CO.,
VENTILATING & WARMING ENGINEERS
WORCESTER, MASS.
RYES-WOODBURY

PLATE V.



The Smith Air Warmer, having from 750 to 1500 square feet of heating surface with which air comes in contact.

PLATE VI.

Fig. 1

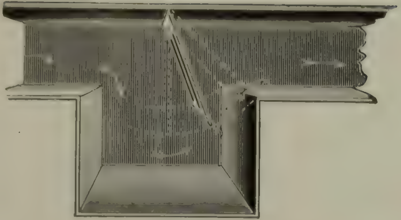


Fig. 2

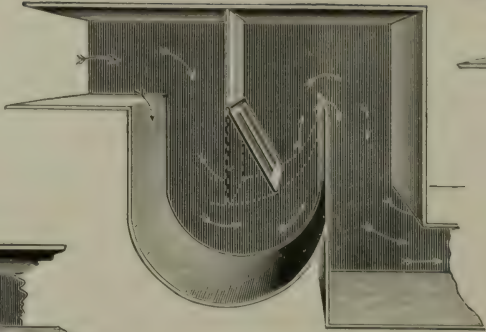


Fig. 3

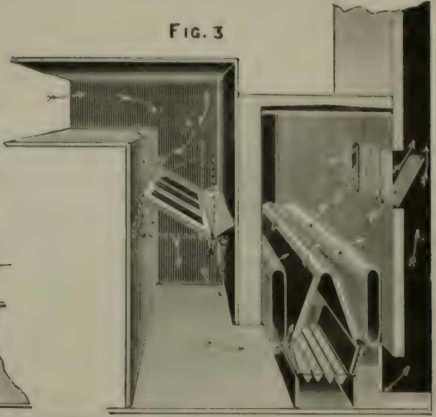


Fig. 4

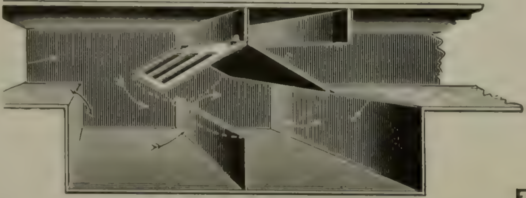


Fig. 5

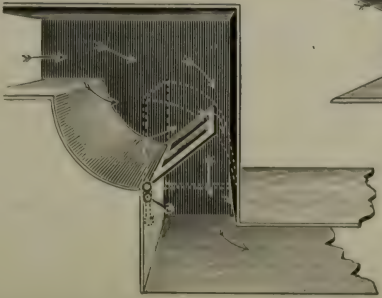
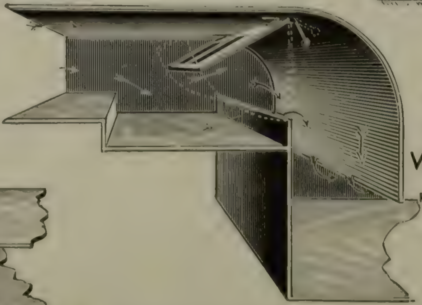


Fig. 6



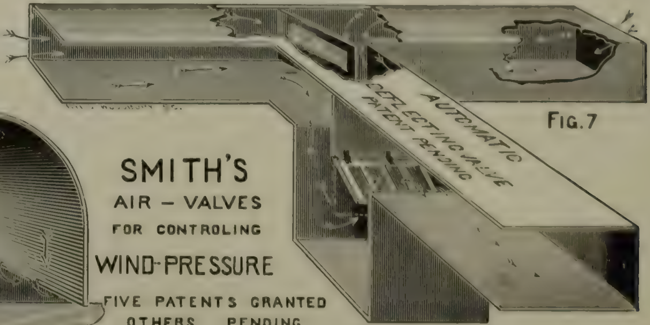


Fig. 7

SMITH'S
AIR – VALVES
FOR CONTROLING
WIND-PRESSURE
FIVE PATENTS GRANTED
OTHERS PENDING

O. S. KENDALL & CO.,
WORCESTER,
MASS.

SUBSTITUTES FOR THE JANITOR'S BRAINS AND ALWAYS PRESENT.

PLATE VII.

joined and bathed as to reduce the danger of expansion and leakage to a minimum.

The Hygeian heater is constructed on the same principle as the steam radiator, the only material difference being in the manner of generating the required temperature. The Hygeian possesses, in a large degree, qualities of a sanitary nature only heretofore found in steam heaters and hot-water apparatus, without the expense, and with an economical consumption of fuel. The radiating surfaces are of heavy cast-iron, and so arranged that no portion of the metal comes in contact with the fire. The exterior surface (or that portion over which the air passes to be warmed) is nearly eight times greater in area than the interior surface; hence, no matter how hot the inner chamber may be, the outside or radiating surface will never become overheated. The small pins on the outer surface not only add to its area, but they also serve to divide the air to be warmed into innumerable small bodies, thereby warming it more quickly and uniformly.

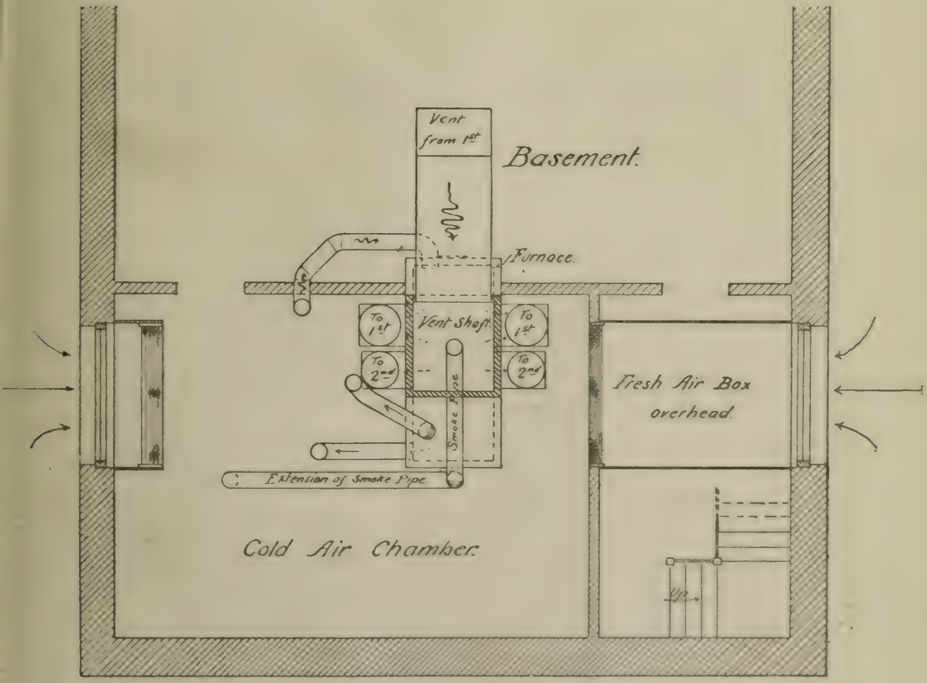


Fig. 1.

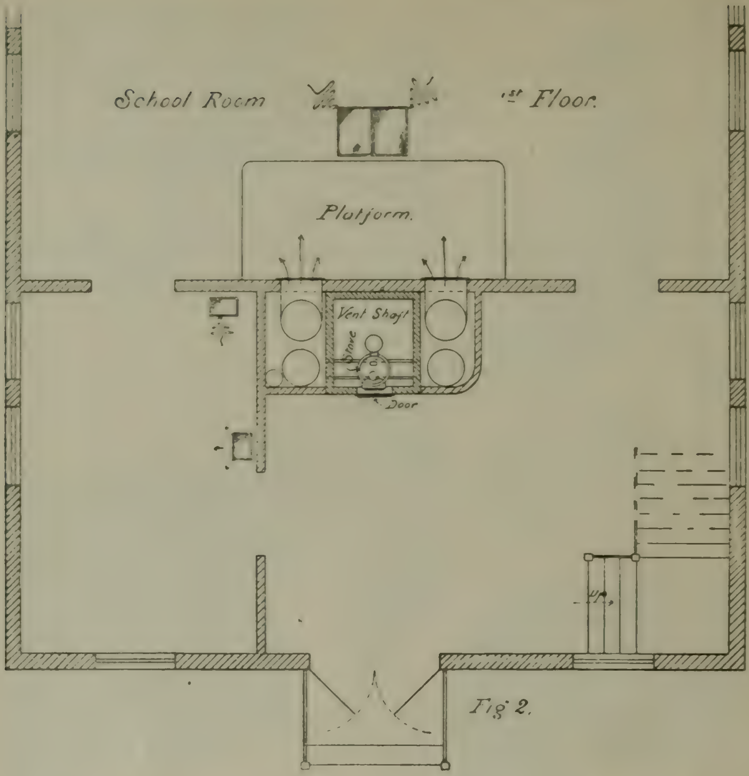


Fig 2.

Fig. 1 shows a general basement plan. The end towards the front of the building is partitioned off, and made to serve as a cold-air chamber, thus avoiding the use of a boxed conduit, and the retarding effect of friction and other obstructions to flow of air through contracted channels connecting directly with the housing of the heater. The heater is shown facing into the basement or cellar, the body with its casing of brick work extending into the cold-air room; from this room the fresh air enters at the ground level, through openings on each side, and also at the rear end, as shown in Fig. 4. The warm-air outlets are from each side, and directly under the ventilating chimney, which is built on the furnace walls, with suitable iron beams to support the base, the beams resting on four corner pieces, the whole firmly tied and bound together, to guard against spreading. The top covering of the warm-air chamber serves as a bottom for the foul-air shaft (Fig. 5). In the centre of the ventilating shaft an eight-inch cast-iron smoke pipe is erected, extending some two feet above the top of the shaft; the ventilating shaft extends about three

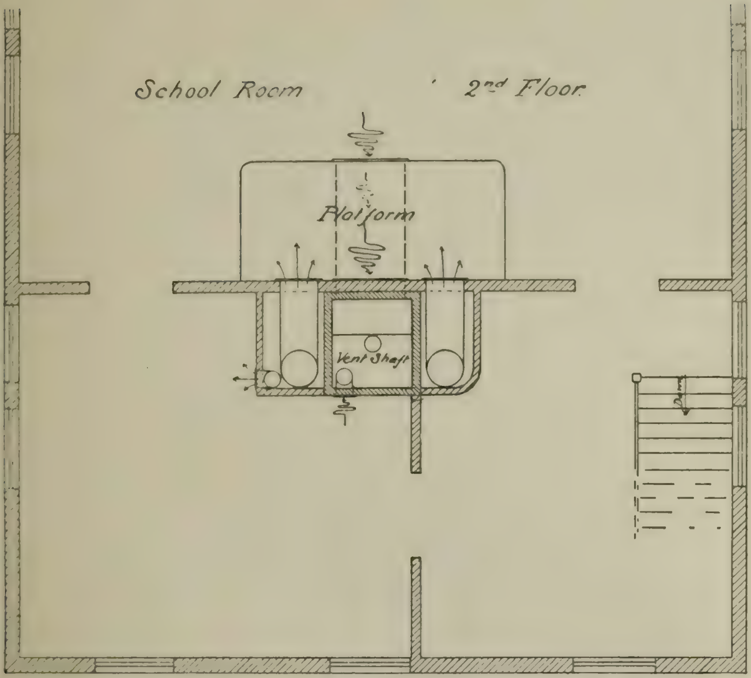


Fig. 3.

feet above the ridge of the roof (Fig. 4). The foul air is drawn from the school-room on the first floor through a large grating in the floor in front of the platform (Fig. 2), thence through a galvanized-iron box, entering the base of the ventilating shaft over the front of the heater (Figs. 1 and 4). Within the ventilating shaft, near the level of the first floor, is suspended a heavy cylinder stove, connected with the smoke stack, access to which is through a large door in the side of the stack, opening into the front entry. This stove is for the purpose of promoting ventilation in warm or moderate weather. The foul air from the second floor (Figs. 3 and 4) passes into the ventilating shaft at the side, back of the platform, and also in part under the platform at the floor level. At this point the ventilating shaft is divided by a partition extending upward about four feet above the top of the opening. The foul air from the coat rooms enter the ventilating shaft, the one from the first floor entering the side of the large galvanized duct, taking a curve towards the main shaft, and the one from the second story by a register in the side, with its pipe extending up about six feet in the shaft.

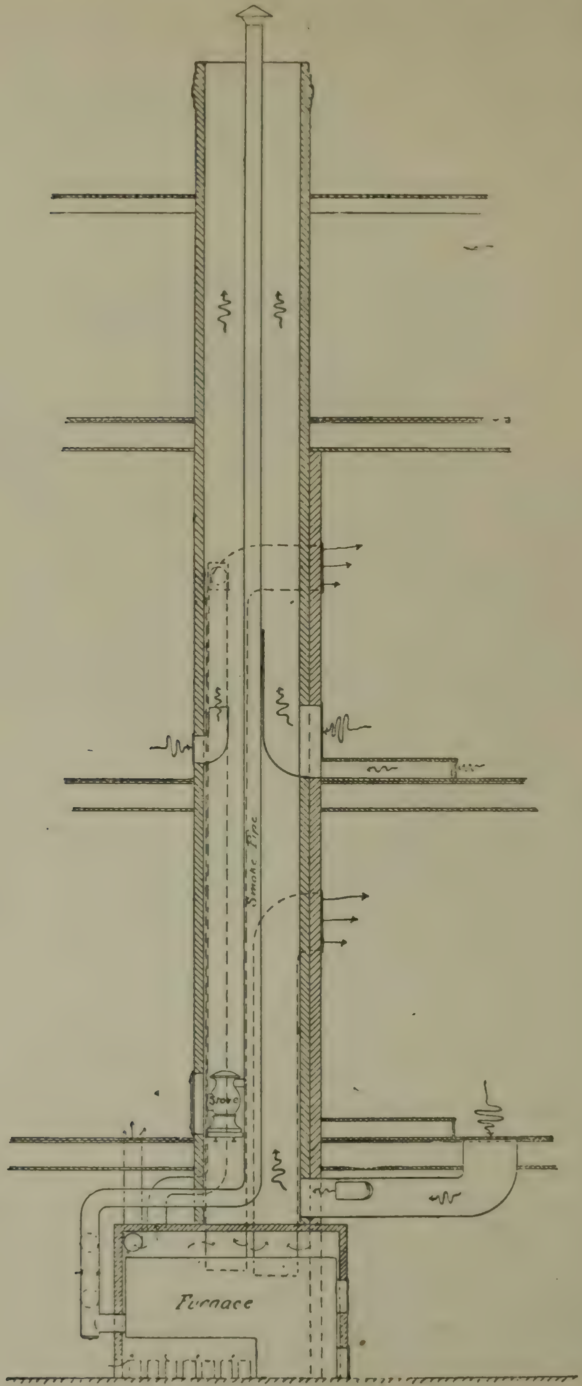


Fig. 4.

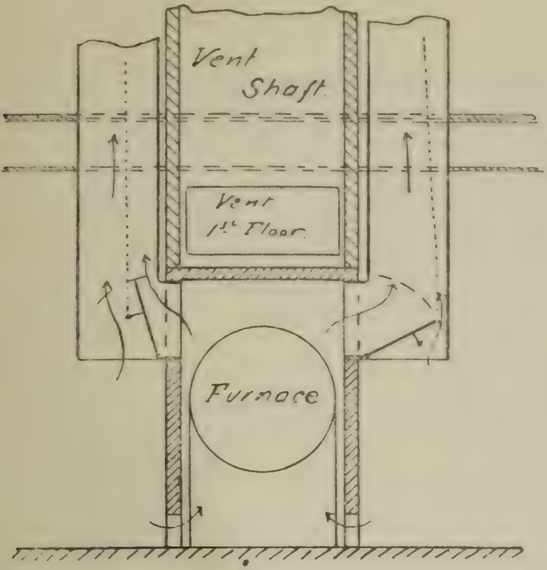


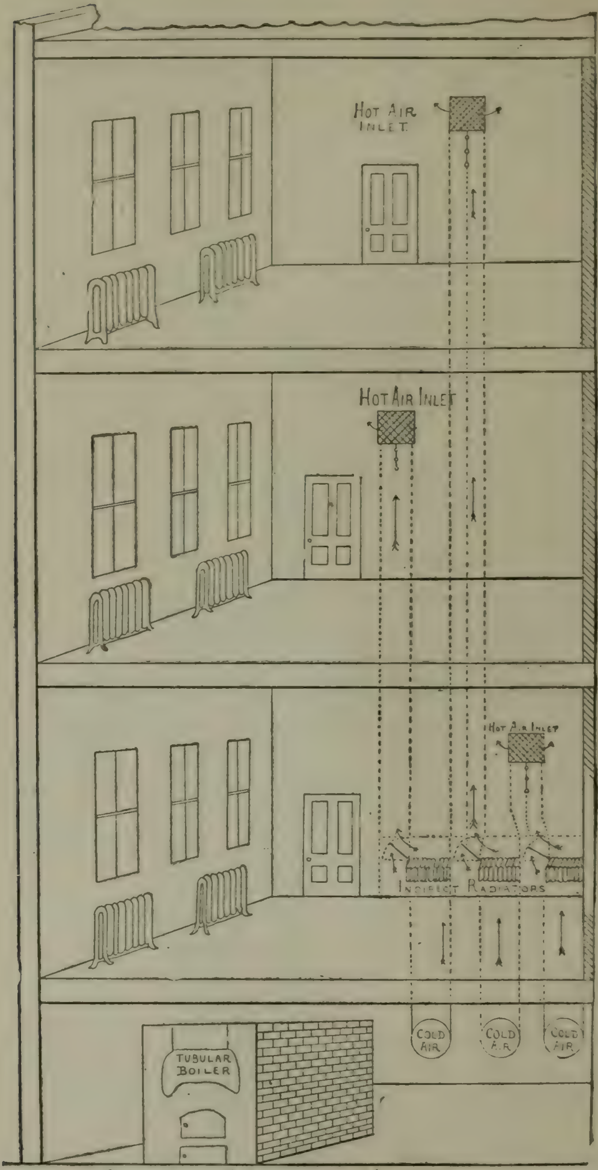
Fig. 5.

The fresh-air supply is taken from each side of the building (Fig. 1). The area of each opening is about eight square feet. Light gossamer flaps are so arranged on a backing of wire netting as to open inward when the wind pressure is from that quarter, the flaps on the opposite side closing. By this arrangement the pressure is more uniform on the cold-air room. The supply pipes from the warm-air chamber (Fig. 5) have valves for regulating the temperature of the room by mixing the air of the cold room with that of the hot. These mixing valves are manipulated by pulleys or chain attachments, so arranged as to be secured by simple means in any position for obtaining the supply of temperature wanted, and are in each school-room under the control of the teacher. The small pipes deliver heat to the coat rooms, the foul air being conveyed to the main shaft. The warm air is delivered to the school-room through two twenty-inch pipes for the first floor, and two eighteen-inch pipes for the second floor. The area of the main ventilating shaft is sixteen square feet.

WARMING AND VENTILATING, AS APPLIED TO THE COCHITUATE GRAMMAR SCHOOL, WAYLAND, BY D. W. PARLIN, NATICK.

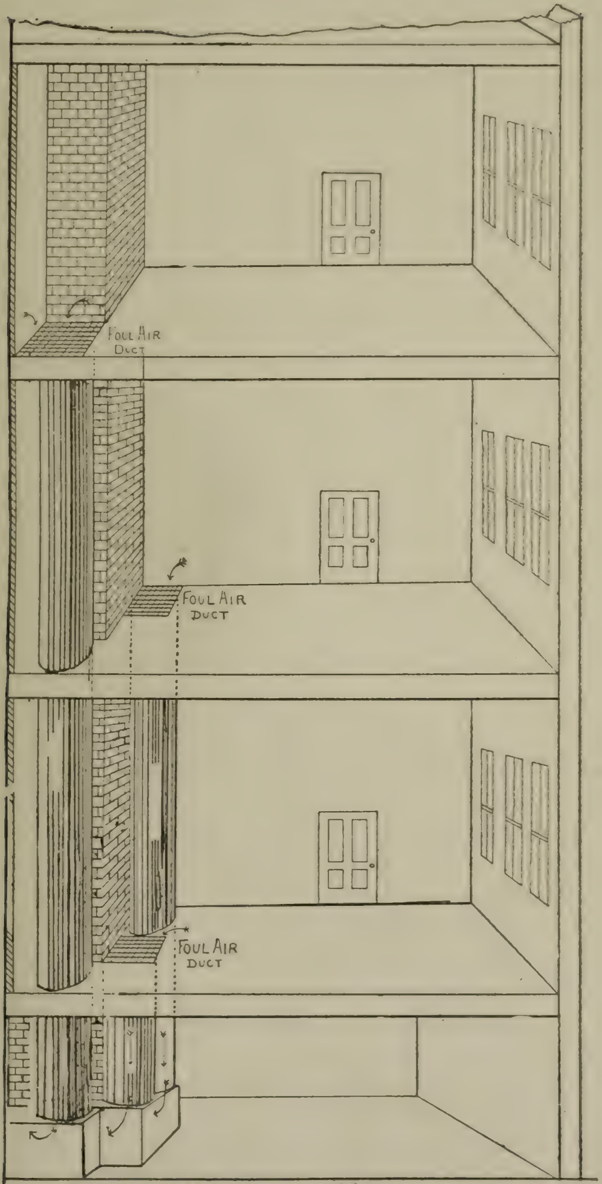
This is a three-story wooden building, 52 by 52 feet outside. Sixteen feet from the front is a partition running from side to side, extending through all the floors. The portion of building front of

PLATE I.



SYSTEM OF HEATING AND VENTILATING
BY W. D. PARLIN, NATICK.
AT SCHOOL HOUSE IN COCHITUATE.

PLATE II.



SYSTEM OF HEATING AND VENTILATING
BY W. D. PARLIN. NATICK.
AT SCHOOL HOUSE IN COCHITUATE.

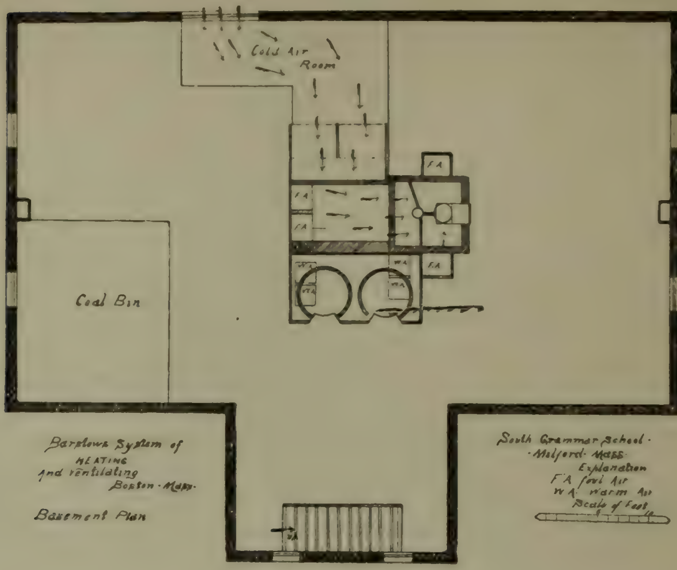
this partition on the first floor is devoted to the main entrance and stairway to second floor, with cloak rooms on either side; while that of the second and third floor is used for staircase and cloak rooms with recitation rooms on each side. On the rear side of the building is also a tower stairway, to be used if necessary as a fire-escape. The building is divided on each floor in the centre by a partition, thus making six school-rooms all having the same floor space, but of slightly varying height, and each containing an average of 1,338 cubic feet of air space, and with seats for fifty pupils. This building was formerly heated by stoves, with no means of supplying fresh or of removing the vitiated air. During the past summer the school-rooms, together with a recitation room in each of the second and third stories, at the south-east corner of the building, have been supplied with a system of heating and ventilation in conformity to the law regarding the same. A forty-horse-power improved tubular boiler has been placed in the cellar, which supplies steam to six indirect radiators encased with galvanized iron, each containing 120 square feet of surface. From these heating chambers, which are located in the first story, are taken six rectangular galvanized-iron pipes, 32 by 20 inches, 30 by 20 inches and 28 by 20 inches, to the first, second and third floors respectively, discharging into the rooms at a point eight feet above the floor. The heating chambers are supplied with mixing dampers, and connected by pulleys and chain to rooms above (as shown in the diagram, Plate I.), so as to be easily operated by the teacher. Two cold-air rooms are built in the cellar, supplied through openings 42 by 44 inches. From these cold-air chambers large galvanized-iron pipes connect with the heating chambers. The two recitation rooms are supplied with warm air by means of an indirect radiator, incased in the same general manner as the others, containing 48 and 72 square feet of surface respectively, and supplied with cold-air pipes and mixing dampers. The air is taken to the second story through a sixteen-inch pipe, and to the third story through a fifteen-inch pipe.

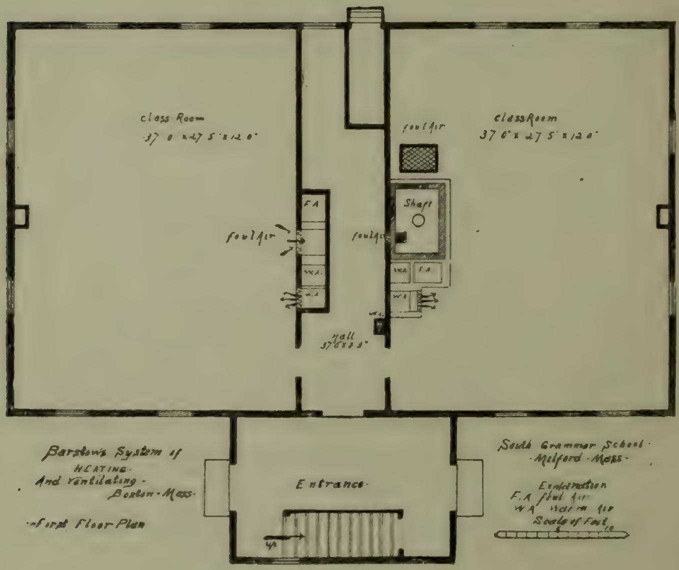
In addition to the above, two direct radiators are placed in each of the six school-rooms, to supplement the indirect radiators in very cold weather, if found necessary. Direct radiators are also placed in all the cloak rooms, entries and staircases, so that the entire building shall be well warmed. As a means of removing the vitiated air from the rooms, a brick shaft having an eight-inch wall has been constructed at a point of intersection of the main partition, the inside dimensions of which are 5 feet 8 inches by 5 feet 4 inches, and its height 61 feet. From each of the six school-rooms, and clustered about this stack, are round galvanized-iron pipes (as shown on Plate II.) of the following diameter: 27¾ inches, 29 inches and 30¼ inches for the first, second and third floors respectively. These lead to the cellar, and there connect with the shaft at its base. In this shaft is a small furnace, to heat the air and thus cause a circulation in the rooms. The exhaust flues from the recitation rooms are 18 by 20 inches in diameter, from the second and third floors respectively.

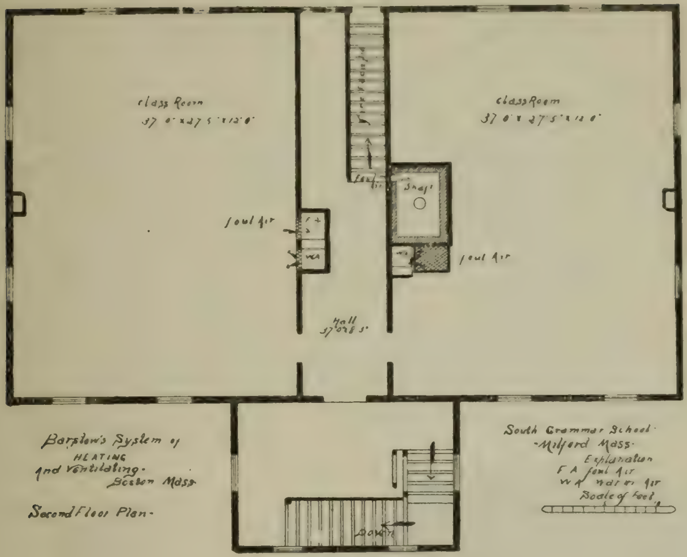
A test of some of the rooms, made November 20, by Inspector J. H. L. Coon, late in the afternoon, but before the school had closed, showed the following results: The outer air being at 40° F., on the third floor, the south room, there was a supply of 1,500 cubic feet of air per minute, at a temperature of 82° F., and an exhaust of 1,700 cubic feet, with a temperature at the outlet of 68° F. The temperature of the room at the breathing line was 71° F. On the second floor, south room, there was a supply of 1,850 cubic feet per minute, at a temperature of 80°, and an exhaust of over 1,900 cubic feet, at a temperature of 68°, while the temperature of the room was 70°. A smoke test of these rooms showed that the circulation was excellent. The other rooms on the second and third floor showed equally as good results. The school having closed, no further examination was made.

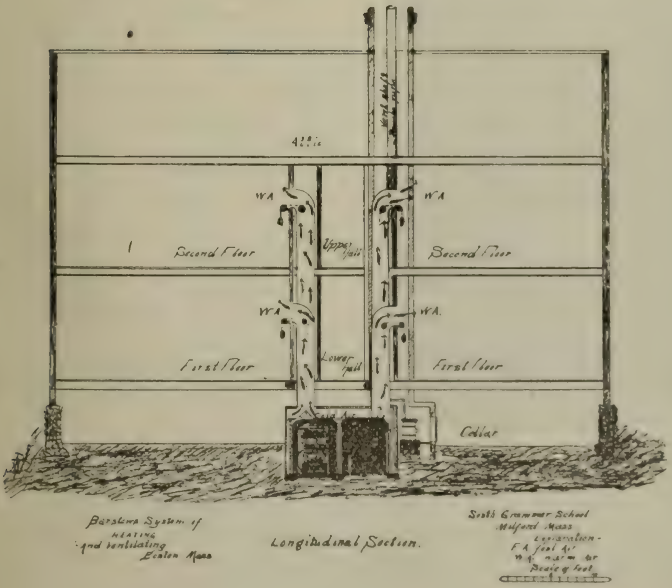
System of Heating and Ventilation, Barstow Stove Company, 56 Union Street, Boston.

This company have introduced a simple system of heating and ventilation. They set one or more of their large, gas-tight school-house furnaces in brick work, to be used together or independently, and furnish a large amount of pure, warm air, which is admitted into the rooms above through gratings seven feet above the floor. The warm-air ducts are of galvanized iron, 24 by 24 inches square, and are supplied with valves operated from the rooms above for mixing cold and heated air. For exhausting the foul air, this company use heated brick flues or their sectional corrugated galvanized-iron shafts, which occupy less space than brick ones, and are especially well adapted for old buildings. The vitiated air is taken from the rooms through gratings placed in or near the floor; the galvanized ducts, 24 by 30 inches, leading from them, are carried down into the bottom of the shafts, or in some cases run directly into the shafts by means of direction flues. The cuts on pages 68 and 69 illustrate the Barstow system, as applied to the South grammar school-house at Milford.


Cold Air Room
F.A
F.A
F.A
F.A
W.A
W.A
W.A
F.A
Coal Bin
W.A
Barstows System of
HEATING
And ventilating
Boston · Mass ·
Basement Plan
South Grammar School ·
· Milford · Mass ·
Explanation
F.A foul Air
W.A warm Air
Scale of Feet
5
10


class Room
37' 0" x 27' 5" x 12' 0"
class Room
37' 0" x 27' 5" x 12' 0"
foul Air
Shaft
F.A
foul Air
foul Air
W.A
W.A
W.A
F.A
W.A
W.A
Hall
37' 0" x 8' 5"
Entrance ·
W.A
Barstows System of
HEATING ·
And Ventilating ·
Boston · Mass ·
· First Floor Plan
South Grammar School ·
· Milford · Mass ·
Explanation
F.A foul Air
W.A warm Air
Scale of Feet
5
10


Class Room
37' 0" x 27' 5" x 12' 0"
Class Room
37' 0" x 27' 5" x 12' 0"
Shaft
Foul Air
F A
W A
Foul Air
Hall
37' 0" x 8' 5"
Down
Barstow's System of
HEATING
and Ventilating.
Boston Mass.
Second Floor Plan.
South Grammar School.
Milford Mass.
Explanation
F A foul Air
W A warm Air
Scale of Feet


W A
W A
W A
W A.
Upper Hall
Lower Hall
Second Floor
Second Floor
First Floor
First Floor
Cellar
Barstow's System of
HEATING
and Ventilating
Boston Mass
Longitudinal Section.
South Grammar School
Milford Mass
Explanation.
F A foul Air
W A warm Air
Scale of Feet

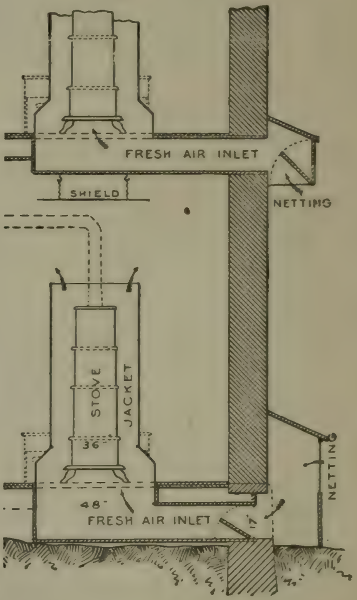
The Barstow Stove Company also manufacture the "Puritan" jacketed stoves that are used in many school-houses in our State. The method of heating by them is very simple, and the company claim that it has many advantages: —

1. It can be easily applied to that large class of buildings which it is not convenient or practicable to heat by furnaces.

2. When the conditions of success are observed, it is possible to secure perfect, or nearly perfect, ventilation by this method.

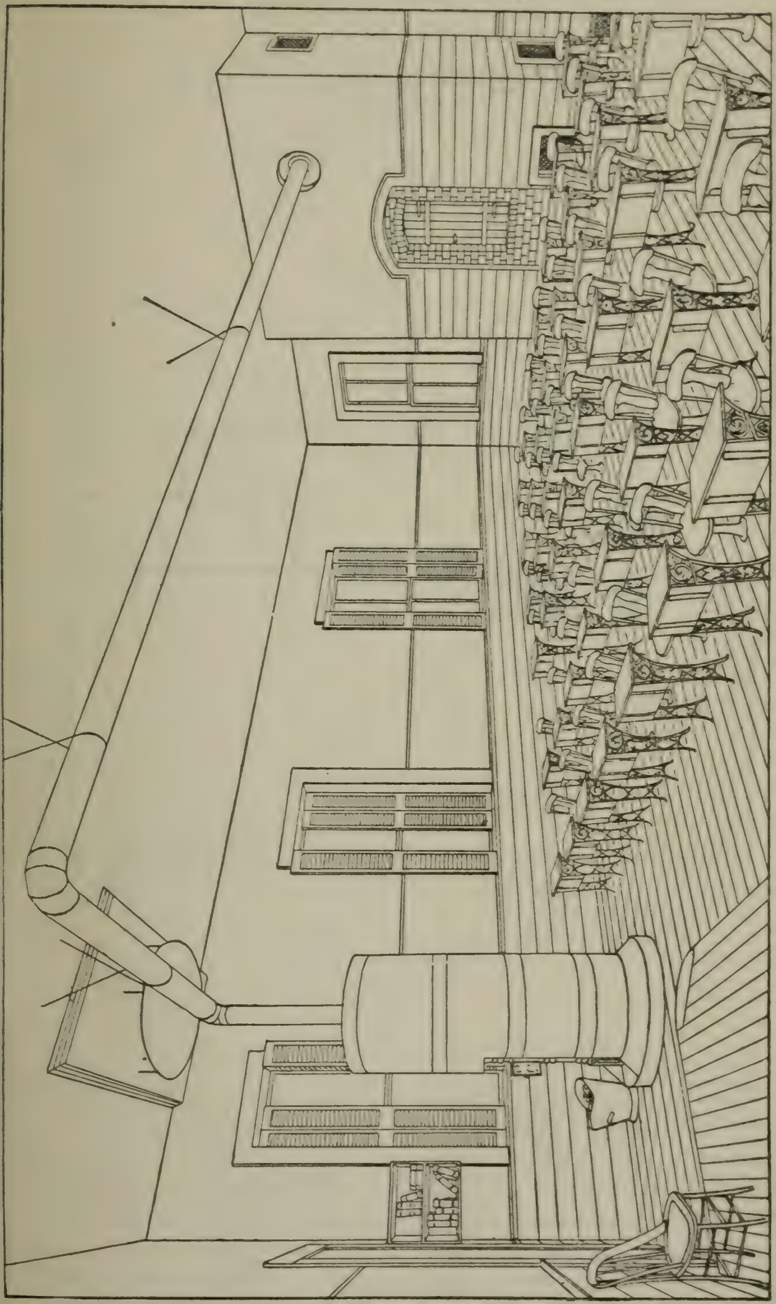
3. The position of the stove in the school-room prevents any waste of heat. The whole apparatus is under the immediate supervision of the teacher, who can attend to it without leaving the room.

4. By the Puritan jacketed stove a large amount of moderately heated air is furnished (see cut), and there is little danger of overheating; the jackets around the stove protect those sitting near from the direct or radiant heat.

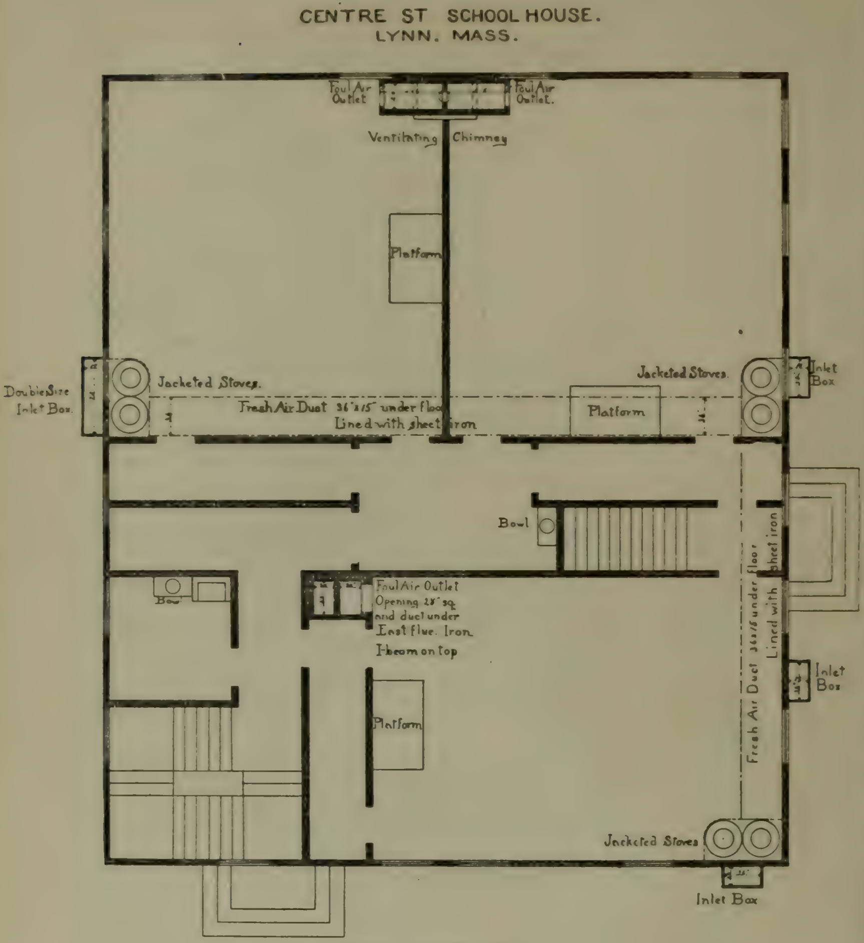


Experiments with the Puritan jacketed stoves in the Red Rock school-house in Lynn, made under the supervision of Dr. J. G. Pinkham, showed results that were highly satisfactory to the State Board of Health (see their report for 1888).

The same method of ventilation is employed by this company, whether furnaces or jacketed stoves are used for heating.



BARSTOW PURITAN STOVE AS USED AT LYNN.



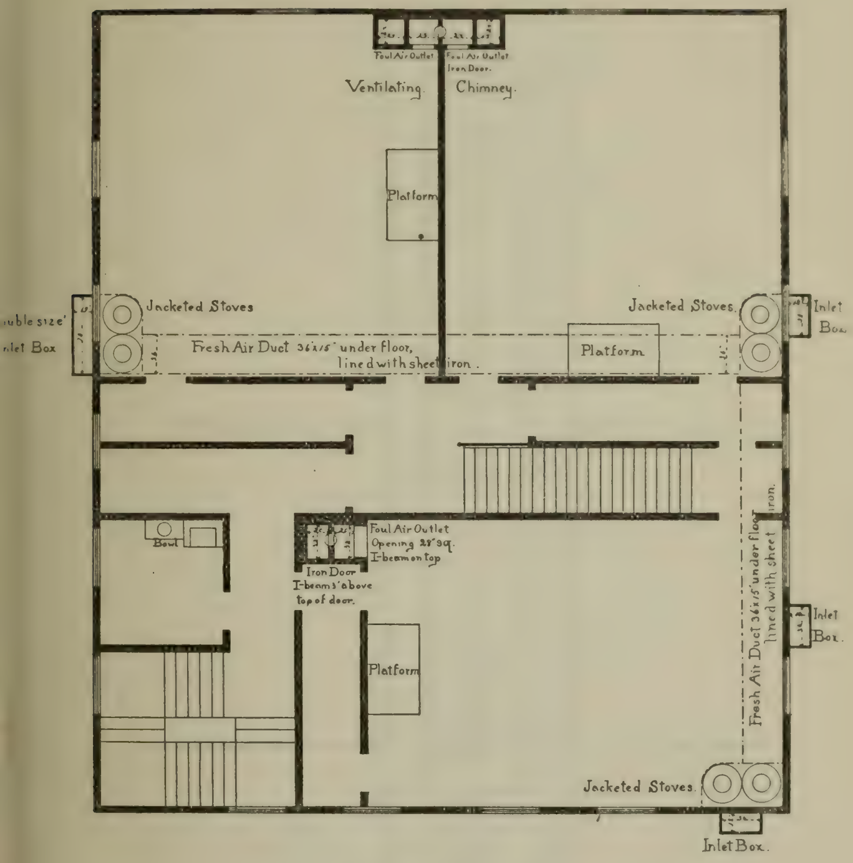
FIRST FLOOR PLAN.

PLATE A.

Centre Street School Building, Lynn.

During the summer vacation of 1890 this school-house was materially changed in its construction, by remodelling and rebuilding the halls, stairways and school-rooms. The old exits were changed, and a new one added, leading direct to Centre Street, so that the main entrances are now facing the east and front sides of the building. Seven new windows have been placed in the first and second stories, so arranged that the light falls upon the desks of the scholars from their rear and left side. Six large, well-lighted and well-ventilated rooms have thus been secured, good

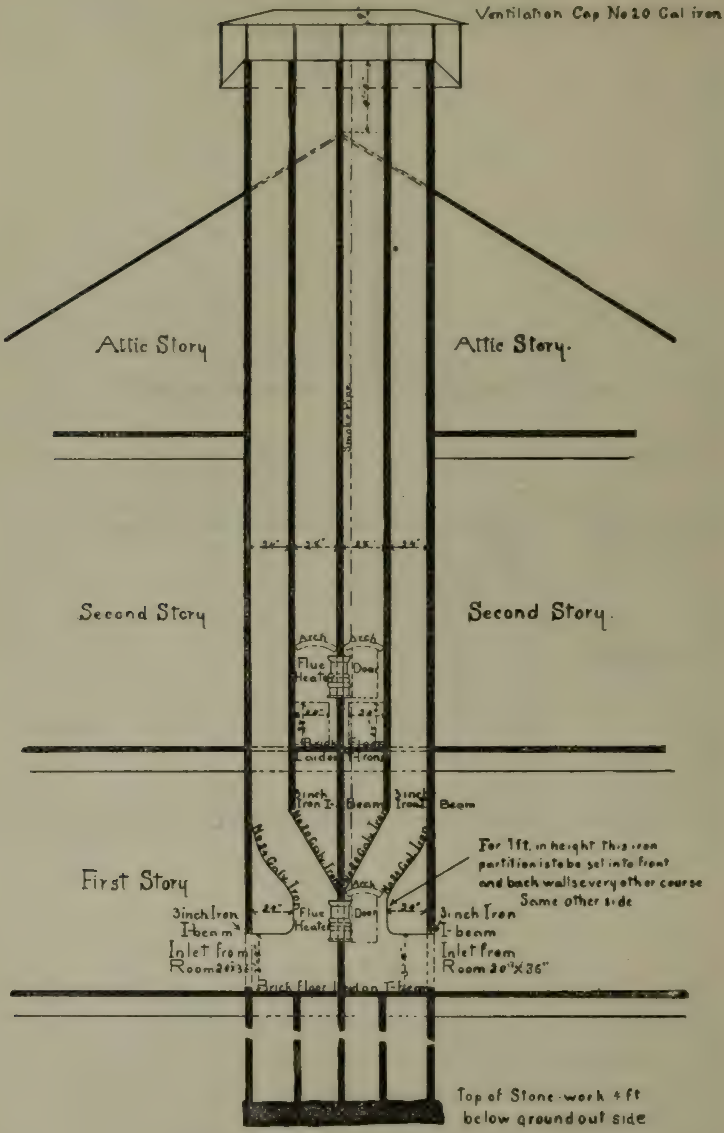
CENTRE ST SCHOOL HOUSE
LYNN, MASS.



SECOND FLOOR PLAN.
Plate B.

hallways provided, and admirable stairs of easy rise and tread obtained. The rooms in the second story are the counterpart of those in the first, both in size and finish. Fifty grammar and two hundred and seventy-five primary scholars are now easily accommodated. The teachers and pupils have easy and direct access to all of the school-rooms in the building, without passing through any of their neighbors' rooms. The halls are six feet wide, and provided with fire and smoke stop doors, moving on double-acting hinges. In addition to all this, there is an admirable system of heating and ventilation. (See Plates A and B.) Each room is

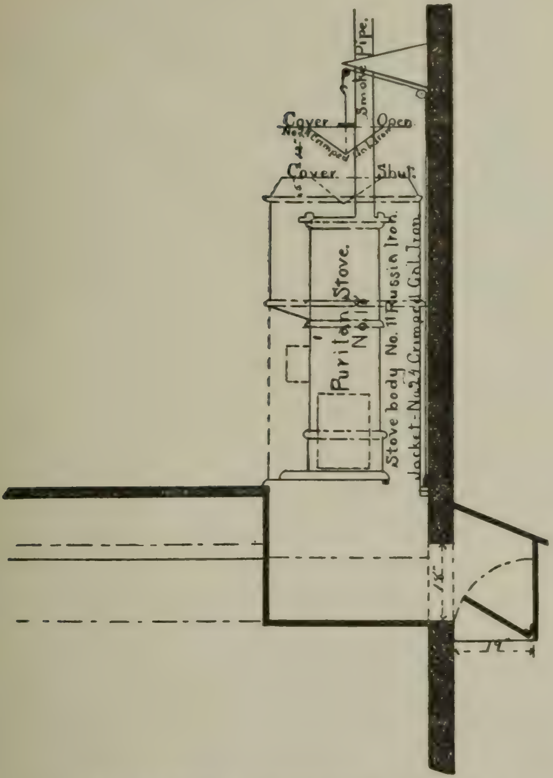
CENTRE ST SCHOOL HOUSE.
LYNN, MASS



SECTION THROUGH LARGE
VENTILATING CHIMNEY.

PLATE C.

CENTRE ST. SCHOOLHOUSE,
LYNN, MASS.



SECTION THROUGH JACKETED STOVE
AND INLET BOX.

PLATE D.

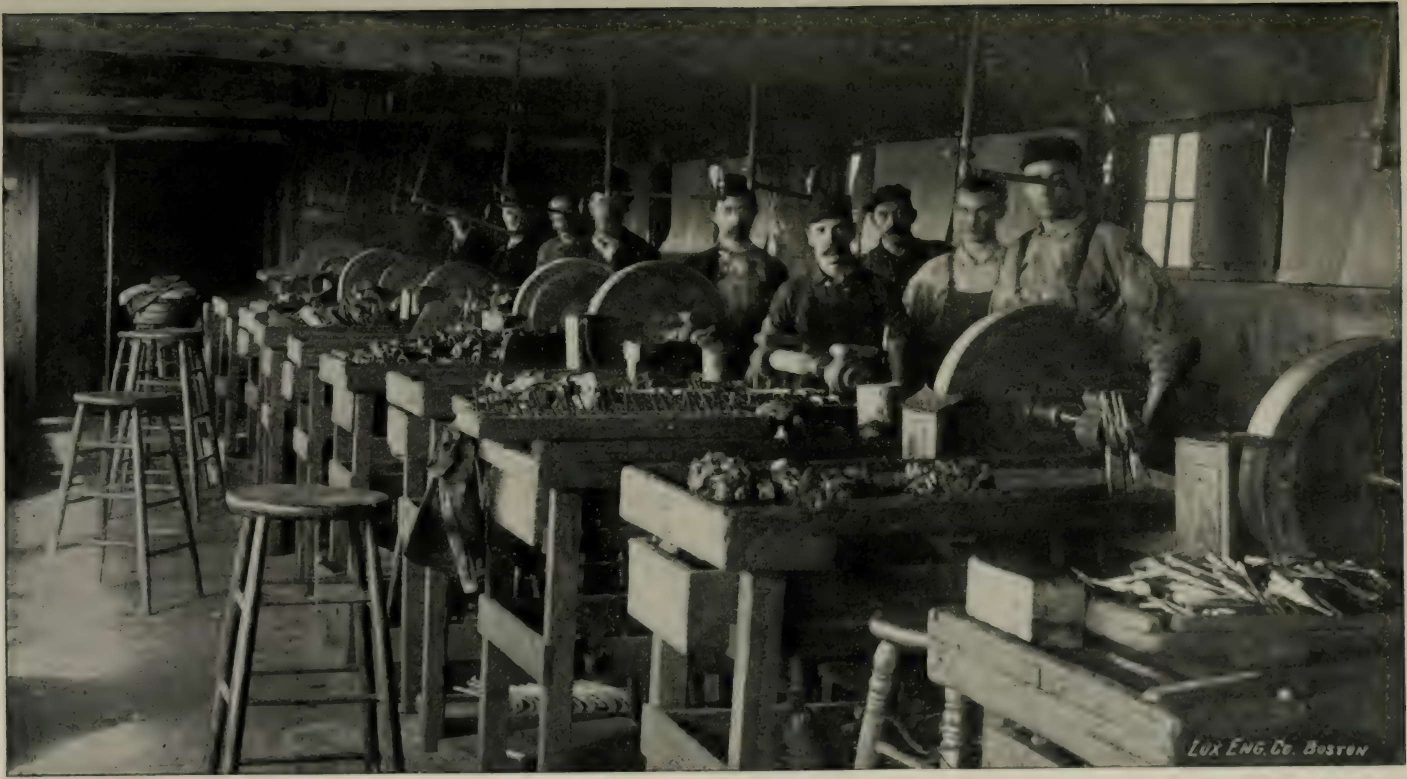
provided with a "Puritan" double-heater, encased in galvanized iron, and located in the corners of each school-room most exposed. The system employed was recommended by Dr. J. G. Pinkham, designed by Theodore P. Perkins, Esq., civil engineer, citizens of Lynn; and by it four square feet of pure air is drawn under and around each of these stoves from outside of the building, and is warmed before it enters the school-room. This quantity of warm air is coming into each of the rooms all of the time; the vitiated air passing out of the room through the outlets and ventilating shaft, aided by a fire in a small stove, or flue heater, located in the corner diagonally opposite the twin Puritans. This outlet is always doing its proper work, no matter what the state of the atmosphere is outside of the building. (See Plates C and D.) All of the old materials that could be utilized were economically worked into the repairs of the building in making these alterations. Dr. Pinkham and Civil-engineer Perkins conceived the plan, Committee-man Wiley and Master-mechanic Mooney superintended the work of remodelling and reconstruction. Economy was studied in all of its details. The job, which is, by the way, the largest one ever yet undertaken by the Lynn school department, and the entire cost of these improvements, including new curtains and new furniture purchased for one school-room, was about $3,300. Mr. Bruce, superintendent of schools, says that this school-house last June was one of the worst ventilated in the city of Lynn; and that it is now one of the very best.

PROTECTION FROM MACHINERY.

The specific protection against bodily injury to employees in manufacturing and mechanical establishments by securely guarding belting, shafting, gearing and drums, and the fencing in of all dangerous machinery, has decreased accidents in our Commonwealth arising from such causes.

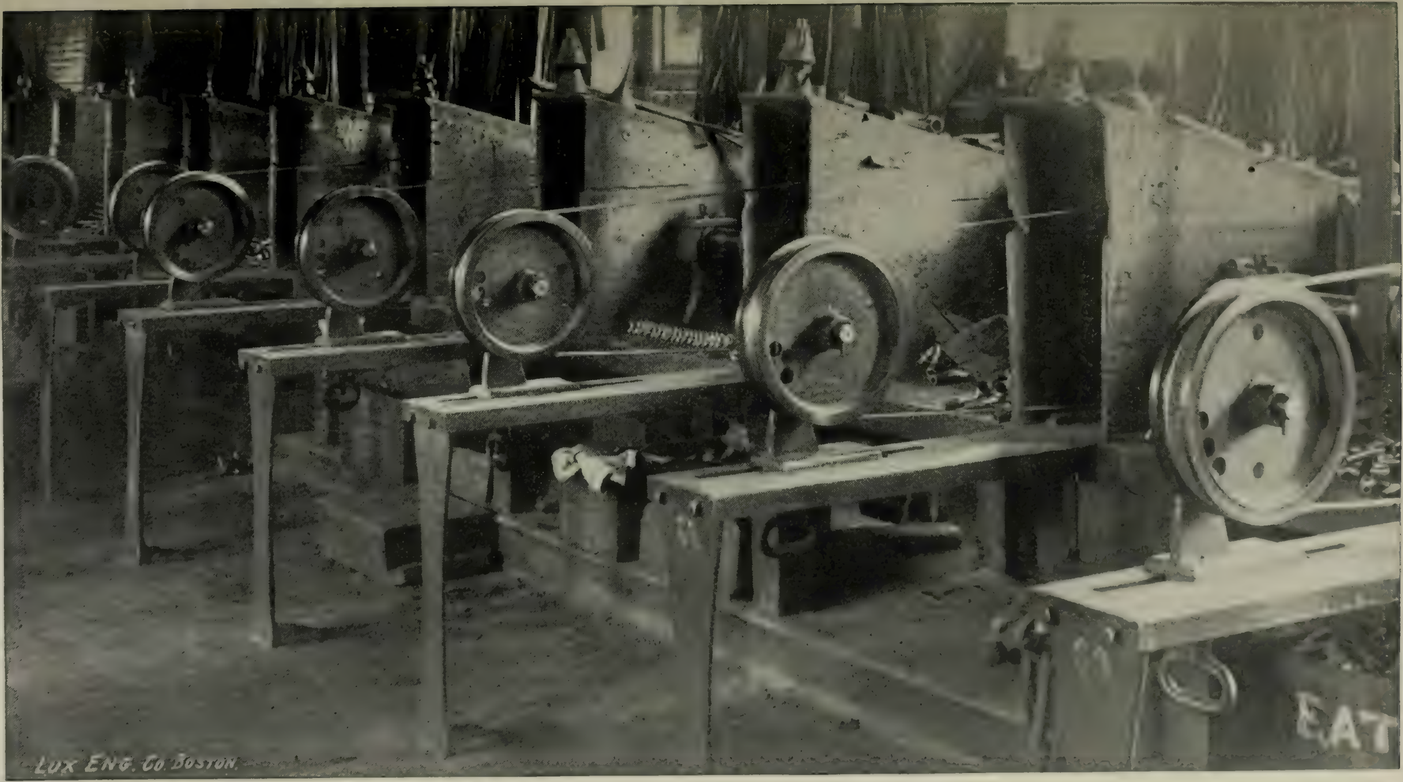
It is obvious enough that machinery in operation is necessarily dangerous; and this danger is enhanced by the fact that a large proportion of the working people in manufacturing establishments, especially in textile factories, are women and children, who scarcely realize this danger, much less intelligently guard against it.

In the early history of the inspection work of this department it was found, in our visits to factories and other establishments where machinery was used, that but little attention had been paid to securely guarding against the accidents that were constantly occurring by the use of unguarded machinery. I well remember my first visit to a rubber factory, and the answer to my request that the heavy gears should be boxed, — that it was impracticable, and had never been done. But a visit at the present time to any of these establishments will show the security afforded employees by the care exercised in guarding such portions of the machinery as are known to be unsafe and dangerous. The deadly "set screw," that has



LUX ENG. CO. BOSTON

POLISHING ROOM WITHOUT EXHAUST FAN.



POLISHING ROOM WITH EXHAUST FAN.

caused the loss of so many lives, is made safe by a simple device, and at a trifling cost.

The improvements that have been made in machinery specially in use in the manufacture of textile fabrics are marvels of mechanical ingenuity and invention; and at the present time machinery so used is seldom allowed to leave the manufactory without the proper safeguards for the protection of the operatives employed.

The owners and agents of establishments in which machinery is used have shown a commendable spirit in co-operating with this department in our attempt to reduce to a minimum the perils to which employees are exposed in their daily labor.

The introduction of fans and similar appliances for the removal of foul air and noxious dust and vapors in factories and workshops, has proved a blessing to those who otherwise would have been obliged to labor under conditions detrimental to health and of constant menace to life itself.

WEEKLY PAYMENTS.

April 1, 1890, I received a communication from C. H. Trenholm and Hugh O'Connor, complaining that the Old Colony Railroad Company was violating the weekly-payment law, and calling upon me to compel the said railroad company to comply with the statute. The following is a copy of the letter received: —

GRAND COUNCIL STEAM RAILROAD MEN'S PROTECTIVE UNION.
BOSTON, MASS., April 1, 1890.

RUFUS R WADE, *Chief District Police, Boston, Mass.*

DEAR SIR: — Due and formal notice is hereby given that the Old Colony Railroad Company is violating the weekly payment law. You are hereby requested to compel the Old Colony Railroad Corporation to pay weekly in compliance with the law. We demand this on behalf of members of our organization working on that road, for whom we are acting as agents.

Yours respectfully,

C. H. TRENHOLM,
HUGH O'CONNOR,
Legislative Committee.

Immediately on receipt of the above letter, I detailed inspectors Halstrick and Coon to investigate the complaint, and to secure evidence of violations of the law, The following is a copy of their report to me, of date April 26, 1890: —

BOSTON, MASS., April 26, 1890.

RUFUS R. WADE, *Chief District Police.*

SIR: —Pursuant to your orders, we visited the Old Colony shops at South Boston, viz: machine shop, Chas. Akin foreman, 115 men; freight-car repair shop, Grafton Upton foreman, 30 men; passenger-car repair shop, Wm. Ames foreman, 55 men; blacksmith shop, A. L. Frazier foreman, 43 men; boiler shop, Forest R. Mills foreman, 16 men; all of which are paid weekly, viz., every Saturday, and have been since the weekly, payment law took effect. We were unable to find any man in the several shops who did not receive his pay weekly.

Respectfully submitted,

JAMES H. L. COON,
JOSEPH HALSTRICK,
State Inspectors of Factories and Public Buildings.

On receipt of the report of inspectors Coon and Halstrick, I directed Inspector Halstrick to visit the several sections of the road, and instructed him to interview as many of the employees of the company as possible, and to obtain the names of twelve employees who were not receiving their pay weekly.

Inspector Halstrick visited Fall River, Fitchburg, New Bedford, Taunton, South Braintree and South Framingham, and consulted with one hundred and fifty employees of the road, solely in regard to the payment of wages; and in not a single case could there be found an employee who was willing his name should be used, or would testify or make complaint against the Old Colony Railroad Company. Finding that I could in no instance secure the names of employees willing to testify to violations of the weekly-payment law, the names of twelve employees were obtained, and, after consultation with District-Attorney Stevens of Suffolk County, it was decided to bring the matter before the grand jury of said county. On the 9th of May last I was summoned with witnesses to appear before the grand jury, and give testimony in the case. Indictments on two cases were found. On the 23d of May last the cases were brought up for trial, and were quashed on the ground that, under the statute, the proceedings should have begun by complaint and not by indictment. Not satisfied with the result of the first attempt to secure compliance with the law, I consulted with the Attorney-General, and was advised not again to bring the company into court until complaint was made to me or the inspector by the employees of the company themselves.

Learning that Mr. C. H. Trenholm had procured a list of names of employees who were willing to testify of violations of the law, Inspector Halstrick was instructed to procure the list of names, with the result which the following report will show: —

BOSTON, June 18, 1890.

RUFUS R. WADE, Esq , *Chief Massachusetts District Police.*

SIR:—In compliance with your order of the 16th instant, to visit Mr. C. H. Trenholm, and procure a list of names which he had promised to furnish you of employees of the Old Colony Railroad who were being paid monthly, in violation of the Acts of 1886, chapter 87, as amended by chapter 399, Acts of 1887, Mr. Trenholm informed me that he had obtained a list of names of such employees, with the intention of submitting them to you as evidence; but, in consulting with said employees, found they were not willing to testify against the road. He stated that, in his opinion, there was not the slightest doubt but that all of the employees of said road could receive their pay every week, if they so desired.

Respectfully submitted,

JOSEPH HALSTRICK,
State Inspector of Public Buildings and Factories.

In connection with investigations already stated, Inspector Halstrick was directed to visit the Providence division of the road; and the following is a copy of his report to me: —

BOSTON, June 7, 1890.

RUFUS R. WADE, Esq., *Chief of the Massachusetts District Police.*

DEAR SIR: — Pursuant to your orders to me of the 6th and 7th instants, to obtain the names of employees of the Old Colony Railroad Company, who receive their pay monthly, in violation of the provisions of the Acts of 1886, chapter 87, as amended by chapter 399, Acts of 1887, I would state that, having interviewed more than fifty of said employees, at Boston and Attleborough, on the Providence division of said railroad, including conductors, engineers, firemen, brakemen, freight-brakemen, yardmen, gate-tenders and freight handlers, I found that all such employees were willing to admit, and did so admit, that they were paid monthly; but they refused to give me their names, as they said that they had no desire to appear against the road, giving, as a reason, that they had the privilege of drawing their pay whenever they so desired, consequently had no grievances regarding such payment.

Respectfully submitted,

JOSEPH HALSTRICK,
State Inspector of Factories and Public Buildings.

The following is a copy of a letter received from C. H. Trenholm, president of the Steam Railroad Men's Protective Union, and expresses his views as to the action of this department in our endeavors to obtain evidence, and to have the weekly-payment law respected and complied with: —

SOMERVILLE, MASS., July 17, 1890.

RUFUS R. WADE, Esq., *Chief of District Police.*

DEAR SIR: — I find that my papers are missing, containing advertisement wished for; perhaps some of the rest may have a copy; if so, will forward you with pleasure and without delay. I deem it proper to say at this time, on account of some remarks dropped that contain perhaps an inference, that I consider that you and your men have faithfully attended to all matters that are of interest to those whom I represent. Hoping that in the near future I may have the opportunity of thanking you personally for your courtesy, I remain

Yours truly,

CHARLES H. TRENHOLM.

On the 10th of November I again instructed Inspector Halstrick to obtain, if possible, evidence of violations of the law; and the following report will show the result of his efforts: —

BOSTON, Nov. 17, 1890.

RUFUS R. WADE, Esq, *Chief Massachusetts District Police.*

SIR: — In compliance with your order of the 10th instant, to make another investigation of the alleged violation, by the Old Colony Railroad Corporation, of an act to provide for the weekly payment of wages by corporations, and to secure the names of employees of said road, paid monthly, to appear in evidence against said corporation, will state that the employees, all over the line of said road, interviewed by me, consist of engineers, firemen, brakemen, switchmen, yardmen, car inspectors, freight handlers and section hands; and the following are the railway centres which I visited: South Framingham, Mansfield, Taunton, Fitchburg, South Braintree, Fall River and New Bedford. My endeavors to obtain the desired evidence in this matter did not prove very successful. In fact, the employees generally appeared to be perfectly indifferent as regards payments, frequent or otherwise. In answer to my inquiry as to how they were paid, no apparent hesitancy to respond was manifest; but my request for the names of the employees (a request which I had occasion to make many times) was absolutely refused. In fact, many of the employees became quite indignant when I expressed a desire to take their names, stating that it was by their own request that they were paid monthly, and that they could obtain it oftener if they desired; in consequence of which they did not feel justified in giving me their names, to appear in evidence. In connection with the above statement, relative to the views of the employees on this subject, and to more thoroughly demonstrate the results of my inability to procure their names for the purpose stated, I will relate the conversation of an employee who desired to avail himself of the opportunity of giving his reasons for not wishing to have his name used in evidence against the road. In my interview with this gentleman, there was nothing said on my part to indicate to him in the least who I was; and he volunteered the statement that he received his pay monthly, and that there was no doubt in his mind but that he could obtain more frequent payments if he so desired. He cited an instance of an employee (the possessor of a wife and eleven children) who worked with him as a car inspector, who, desiring his pay weekly, wrote the superintendent to that effect some four months ago, and has since received his pay weekly. It is not surprising, in view of this and many similar statements, that the much-sought-for evidence is not easily obtainable.

Respectfully submitted,

JOSEPH HALSTRICK, *State Inspector.*

The following reports are submitted, of the inspectors assigned for the important duty of enforcing the provisions of chapter 149 of the Acts of 1888, namely, to cause proper sanitary provisions and proper ventilation in public buildings and school-houses. The publication of these reports will bring into prominent notice the action of the inspectors, and prepare the ground for honest criticism of this special work of the department, whether it be favorable or condemnatory.

Inspector White reports: —

I have the honor to report, as I have done in so many years before, continued progress in the effectiveness of all the laws committed to me to enforce.

Nearly every order given by me, during the past year, for better egress from, and better means to prevent fire in, buildings, has been complied with, and the few not yet reported complied, I believe to be in process of compliance.

The law of 1888, requiring that plans of certain buildings shall be submitted to this department for approval before construction, has brought about a very great improvement in the ways of egress from such buildings. Architects are usually willing and even anxious to plan buildings in such a way as to secure the safety of the inmates in case of fire; but owners of buildings are frequently unwilling to sacrifice anything in room or convenience to this very desirable end, and many owners object to the expense required to secure proper ways of escape and protection from fire. The architects are now enabled to inform their clients that plans will not be approved by this department unless provided with properly arranged and protected stairways or other ways of escape; and the consequence is that a majority of the plans submitted show that proper precautions are to be taken to secure safety.

A large portion of my time during the year has been devoted to the matter of ventilation of school buildings. Improvements in the ventilation and sanitary provisions in school-houses have been made in twenty-two cities and towns in my district since January, 1890. In a few instances, such as Dracut and Lexington, new buildings are being erected to take the place of those in which better ventilation had been ordered, and these are included in the number stated above. So far as I am aware, no new school-houses are being erected without provision being made for ventilation in accordance with recent improved methods, nor do I think that any will be hereafter erected in this State without proper attention to this very important matter.

I think that architects, committees, and the people generally are convinced that our schools can and should be far better provided for in this respect than they ever have been before, and that that feeling is constantly growing stronger. In fact, the importance of the subject has long been conceded, and nearly all school buildings of any size that have been erected of late years have been provided with some system of ventilation.

The difficulty with these old systems is that they are sadly inadequate for their purpose. The average amount of air furnished to each pupil per minute did not exceed eight cubic feet in most of the school buildings that were provided with systems of ventilation before the present law went into effect. I have found a great many where the supply was not more than six feet per minute per pupil, under the most favorable conditions.

As a general thing, the means for extracting the vitiated air were still more inadequate, the ventiducts were generally ridiculously small, and not provided with heat or other means to produce a draft therein. Very frequently these flues were capped with some patent ventilator, which was of no use except to somewhat obstruct what little movement of air might be produced in the duct by natural means. In one city nearly every school building is provided with from one to four of these ventilators, every one of which a careful examination showed to be worse than useless. The money thus thrown away would have been sufficient to thoroughly ventilate quite a number of the buildings. All new buildings can easily be planned for a thorough and effective system of ventilation.

It is in old buildings that we experience the greatest difficulty in arranging for a proper supply of air. In giving directions for improvement in such buildings, I have been inclined to move slowly, and with a proper regard to reasonable expenditure. In buildings containing from four to twelve rooms, in good condition, and likely to be used for many years to come, there seems to be no good reason why some action should not be taken towards improving their condition, and in nearly all cases where better systems of ventilation have been put into such buildings, the improvement is so great and so immediately apparent as to lead to the conviction that hardly any expense can be considered unreasonable, in view of the results attained. In smaller buildings, of two to four rooms, I have been careful to require changes only in cases where I was convinced that improvements could be made with certainty, and at a justifiable expense. I am happy to state that in no instance has there failed to be great improvement manifest; and, so far as I know, no committee or other authority having the matter in charge in any way regrets their action on the money expended. It is not at all necessary, in providing means of ventilation in such buildings, to resort to any of the more elaborate and extensive systems that are now being put into new buildings or into the larger of the schools now in use. Frequently it is only necessary to provide properly arranged ducts for removing the vitiated air, and to enlarge the cold-air boxes and ducts leading from the furnaces to the rooms, or to provide jackets and ducts for the stoves, in order to immensely improve the condition of the rooms. In my reports of the buildings ventilated in my district during the past year, I have especially mentioned several where excellent results have been attained at a comparatively small expenditure.

After the first cost of putting in new heating and ventilating apparatus, or of rearranging and improving the old appliances, comes the cost of maintaining the new systems. It is not to be wondered at that we are greatly in need of reliable statistics bearing on this important point, as until within the last two years there were no school buildings in the State from which such statistics could be obtained. As last winter was a remarkably mild one, there was little opportunity for a comparison of the old and new systems, under anything like similar conditions. It will require a large number of observations, under varying conditions, and continued through a considerable length of time, to collect data upon which to base an opinion of the relative cost of the old and new methods; but the facts already obtained would seem to indicate that the cost of heating by the new systems will not be nearly so great as is generally supposed.

I have elsewhere referred to the very low temperature of the incoming air required to keep a room up to 70°, when a very large volume of air is sent in from the furnaces or steam coils. I give below, in a tabulated form, some statistics bearing on this point, taken from my note-book of observations made during the present autumn, simply numbering the rooms, instead of giving names of buildings: —

ROOM.	Temperature of Outside Air, Degrees.	Temperature of Room, Degrees.	Amount of Air supplied, in Cubic Feet per Minute.	Temperature of In-coming Air, Degrees.
Room 1, . . .	52	70	310	198
2, . . .	36	70	1,375	70
3, . . .	34	72	1,370	72
4, . . .	54	70	1,775	78
5, . . .	54	68	1,445	74
6, . . .	45	69	1,920	73
7, . . .	52	74	700	106
8, . . .	52	71	1,140	90
9, . . .	53	74	800	104
10, . . .	52	73	2,178	84
11, . . .	50	67	2,800	70
12, . . .	38	70	2,405	83
13, . . .	55	72	400	160
14, . . .	32	70	900	144
15, . . .	34	70	1,350	108

All except two of the above observations were taken in buildings which have been recently provided with improved means of ventilation. The rooms are of the ordinary size, none of them being unusually large or small. Of course the way in which a room is exposed to or protected from the weather, the construction of the building, and many other factors, come in to render any but an extended series of such observations of little value for the purpose of accurate determination of results ; but the figures given above show, in a sufficiently clear manner, that air does not need to be heated to a high temperature to keep a room warm, if a sufficient volume to ensure good ventilation is supplied. Taking these figures as a basis, it would appear that the temperature of the air entering a room should be nearly in inverse ratio to its amount. In Room No. 1, where the supply was only 310 cubic feet per minute, the air had to be heated to 198° to keep the room at 70°, when the outside temperature was 52° ; whereas, in Room No. 8, where the supply was 1,140 feet per minute, the temperature only had to be raised to 90° at the inlet to keep the room at 71°.

The next question is as to the relative cost of heating 1,140 feet of air to 90°, or 310 feet of air to 198°. Theoretically, it would seem to cost a little less to heat the larger amount of air : as in one case, 310 feet of air has to be raised 146°, equal to 45,260 feet raised 1° ; while in the other, 1,140 feet is raised 38°, equal to 43,320 feet raised 1°. Practically, it might cost much more, and by most of the heating appliances in use undoubtedly would cost more. It is claimed, by interested parties, that by better-devised and better-arranged appliances than those ordinarily in use, school-rooms can be heated and thoroughly ventilated at but little if any greater expense than it now costs to heat them.

Although it would take a considerable expenditure of time and money to obtain reliable statistics in regard to this important matter, it seems to me that nothing connected with the subject of ventilation would better repay the outlay. The observations of the temperature and average amount of air supplied could be made by the inspectors, and arrangements could, I think, be made with the school committees to keep an account of the amount of fuel consumed. If such thorough ventilation as we now have in some of our school buildings can be secured without any considerable expense after the first cost of the changes necessary to be made, I believe the people will demand that such changes shall be made as fast as it is practicable to make them. From careful observations already made, I feel warranted in asserting that the ventilation in most of our smaller school buildings can be greatly improved, and the supply of air more than doubled, without any increased expense beyond that of providing proper exhaust flues, and enlarging and rearranging the supply ducts from the heating apparatus.

I subjoin a brief report of the changes made and results attained in several of the school buildings in my district during the past year.

Somerville. — The Forster School in Somerville is one of the largest schools of that city, containing twelve school-rooms, and about six hundred children. When I first visited it, to inspect the means of ventilation, I found the rooms in a very bad condition. There was practically no means for supplying fresh air except through the windows and doors, and, even with these in use all that they could be without exposing the children to draughts, a test of the air showed it to contain, of carbonic dioxide, 22 parts in 10,000.

During the present season a new system of heating and ventilation has been put in by A. A. Sanborn of Boston. An examination of one of the rooms, made November 24, gave the following results: Outside temperature, 34°; temperature of room, 72°, and very even, being the same at the breathing line on the inner and outer sides of the room. The air meter showed a supply of air from the inlet of 36 cubic feet per minute for each pupil present, and a thermometer hung at the inlet indicated 72°.

About the same amount was passing out through the exhaust flue. This air test was made at 3.40 o'clock, the doors and windows having been closed since recess at 2.45 o'clock, and gave a fraction less than 7 parts of carbonic dioxide in 10,000 of air.

Attention is called to the low temperature of the air entering the room from the steam coils, not only in this but in other reports of the buildings recently ventilated, where the supply of air is equally large.

Lowell. — In this city five school-houses have been provided with modern systems of ventilation during the present year, — three new buildings and two old ones. Of the new ones, two, the Cabot Street and the Cross Street schools, are provided with the Fuller & Warren Company's ventilation and dry closets.

The tests for air were made under rather unfavorable conditions, the temperature outside being above 50°, and the rooms closed during nearly a whole session of the school. The samples of air in this case and in all those reported from Lowell were taken and analyzed by Professor Irish of the Lowell high school. Professor Irish reports the best results obtained in the Cabot Street school to show, of carbonic acid, 10.39 parts in 10,000, and in the Cross Street school 12.80 parts in 10,000. These buildings are models of fine finish and interior arrangement, and the system of ventilation seems to be unusually well arranged.

The Edson and Franklin schools are old buildings, the Edson containing eleven rooms and the Franklin eight rooms. They are well filled with children, and at the time of my inspection last year were very poorly ventilated, the air in the rooms in the Franklin being especially bad. These buildings have been recently ventilated by a mechanical system, put in by the Middlesex Machine Company. The heating is done by steam, and the air is sent into the rooms by a Mills fan, driven by an electric motor. The supply is large, averaging at the time of my inspection considerably over 100,000 cubic feet of air per hour for each room. The removal of the vitiated air through the ventiducts does not equal the supply; and this, in my judgment, is one of the defects of the system, and probably accounts for the comparatively large amount of carbonic dioxide found in some of the rooms.

Professor Irish reports as follows in regard to these schools: —

Sample from Room No. 8, Franklin school, gave 12.50 parts carbonic dioxide in 10,000; Room No. 5 gave 12.00 parts, and Room No. 1 gave 12.60 parts. In the Edson, school-room No. 1, there was found 9.20 parts of carbonic dioxide in 10,000 of air; in Room No. 3, 10.12 parts; in Room No. 5, 8.85 parts; and in Room No. 10, 14.62 parts. It should be stated that these samples were all taken near the close of a session, when the rooms had been closed since the recess, or from one and one-fourth to one and one-half hours.

The temperature of the rooms was very even. In the Franklin school, on November 16; with the outside air at 54°, the air at the inlet in Room No. 1 was 78°; at the ceiling, 76°; at the breathing line, 70°; at the floor, 72°; and at the outlet, 74°.

As the Highland annex in Lowell has been already reported in a special report to you, there would seem to be no need of further remarks in this connection, except that I wish to call attention to the remarkably good results of the observations made on the temperature in Room No. 6, on October 23: Outside air, 54°; air at inlet from furnace, 74°; at breathing line, 68°; at ceiling, 70°; at the floor, 66°; and at the outlet, 68°.

I wish here to acknowledge my indebtedness to Mr. G. T. Woodward, inspector of buildings, and Prof. C. W. Irish of the Lowell high school, for valuable assistance, as well as to His Honor Mayor Palmer, G. F. Lawton, Esq., and to several members of the city government, for support and encouragement in my efforts to secure good results in the ventilation of the schools of Lowell.

North Chelmsford. — District No. 8 school in this village is a two-story frame building, containing four rooms. It is heated by stoves, and until this season had only an apology for an arrangement for supplying and removing the air. Upon my recommendation, a brick chimney has been constructed, having an area of cross section of about fifteen square feet, with a cast-iron stove at the bottom, just above the inlet for air from the lower room. The chimney is so located that the air from all the rooms is taken directly into the shaft, without the intervention of ducts. The rooms are to be heated and the fresh air supplied by jacketed stoves. Only one room was completed at the time of my inspection; but the results attained in that room were very good indeed, as the following statement will show. There are fifty-two seats in the room, but, as the membership is only thirty, the calculations as to the amount of air are based on that number. The temperature of the air outside was 36°. The temperature in the room was taken at five feet above the floor on all four sides. Three of the thermometers stood at 70° and one at 71°. At the floor near the middle of the room it was 68°; at the outlet, 70°. The supply of air by the jacketed stove was 44 cubic feet per minute per pupil, and the vitiated air was being removed in about the same amount An air test made with Wolpert's air tester, showed 6 parts of carbonic dioxide in 10,000 of air. The work has been done under the direction of Charles W. Flint, Esq., of the board of selectmen, and seems to be an example of good results attained at a very moderate expense.

Ayer. — The Shirley Street school in this town is a two-story frame building of two rooms, and was heated by wood-burning stoves, with only windows and doors for supplying air. A brick ventilating chimney, about three feet square inside, has been built, and provided with a coal-burning stove at the bottom. The air enters the chimney direct from the rooms through wire-grated openings of five feet area each, the lower one entering under the stove. A new stove has been placed in one of the rooms; but in the other room the old wood-burning stove has been jacketed, and provided with a fresh-air duct.

The inspection of this school was made on a very mild day, when of course the supply of air by the stove inlet would be rather poor; but the chimney was working very finely, and the vitiated air was being removed at the rate of 1,650 cubic feet per minute. There were only thirty-one scholars present, and the test for carbonic dioxide gave 7.7 parts in 10,000 of air.

This school constitutes another example of good results obtained in an old building at a very moderate cost.

Groton. — The high school in this town is a three-story brick building, with three main school-rooms and two recitation-rooms. It has recently been provided with the Smead system of ventilation and dry closets.

There was a low fire in both furnace and stack on one side at the time of inspection; but the results in the high-school room were very satisfactory. The pupils present numbered thirty-nine, and the doors and windows had not been open for one and one-half hours. The amount of air supplied was 34 cubic feet per minute for each person present, and the removal of vitiated air 50 cubic feet per minute per pupil. A test for carbonic dioxide gave 7 parts in 10,000 of air.

Medford. — The Brooks school in this town is a three-story frame building, with four school-rooms in the lower stories and a large hall on third floor. Owing to this hall, two brick chimneys had to be built for ventilation. These chimneys are provided with stoves at the bottom, and ducts lead from the rooms to foul-air chambers in the basement, connecting with these shafts. The furnaces used are of the same pattern as the old ones, in fact, I think only one is new; but instead of the small cold-air boxes which formerly supplied the air, the furnaces now take an abundant supply of air from fresh-air rooms partitioned off in the basement.

I have tested three rooms in this building on two different days, but in both cases under unfavorable conditions for a good air supply, owing to the mildness of the weather. I therefore give the average of the results as found. Air supplied by furnaces, 23½ cubic feet per minute for each person present; air extracted by aspirating chimneys, 28 cubic feet per minute per pupil; carbonic dioxide, 10.3 parts in 10,000 of air. The tests were all made near the close of the school session.

Melrose. — The high school here has been remodelled during this year, and a system of mechanical ventilation provided by Mr. A. B. Franklin of Boston. The air is sent into the rooms through steam coils by a Mills fan, making one hundred revolutions per minute. The vitiated air is carried off by galvanized iron-ducts, in each of which a gas jet is kept burning, to produce a draft.

On November 24 I inspected the lower room on the west side of the building, in which there were at that time fifty scholars. The air was coming in from the fan at a temperature of 108° to the amount of 33 cubic feet per minute for each person present, the temperature of the outer air being 32°. The vitiated air was being carried off at the rate of 41 cubic feet per minute per pupil. Carbonic dioxide, 10 parts in 10,000.

A number of the recently ventilated schools in my district have not yet been inspected by me with sufficient care to report upon, owing partly to want of time, and partly to unfavorable weather preventing my obtaining what might be considered fair average results; but there are several which were at the time of my inspection unfinished in some respect, or not quite perfected in some minor details, in which I expect to obtain very satisfactory results at my next examination. Among these are the grammar school at Shirley Village, the Forge Village school at Westford, the Waverly school at Belmont, and the Union Street school at Woburn.

Inspector Merriam reports: —

I have the honor to report a steady and satisfactory progress of the work in my district during the past year, relating to the several laws intrusted to me to enforce.

Under chapter 316, Acts of 1888, plans have been promptly furnished for all new buildings coming under its provisions, and all changes have been cheerfully complied with. The benefits of this chapter are quite visible to me in the construction and general character of the buildings, though it has been in force but about two years. It also reaches to a considerable extent to buildings of all classes.

The provisions of chapter 426, Acts of 1888, are readily complied with, and the class of work, particularly of fire-escapes and steam piping, has greatly improved since its enactment. It appears to me that this chapter should provide for the care and management of steam boilers, to a certain extent. I find, in many of our public buildings and school-houses, boilers used for heating purposes which remain idle during the warmer months, and which are run by men of little experience during the colder season. In several cases they visit the building only for a short time twice a day, and are entirely ignorant of the condition and workings of their safety valves.

The provisions of chapter 251, Acts of 1883, apply to but very few hotels in my district; but a prompt compliance therewith is maintained, though in many cases great annoyance is caused by the occupants of rooms removing the notices. In one case the proprietor told me that he caused a notice to be placed in a certain room every morning for three weeks.

The work under chapter 149, Acts of 1888, has advanced much during the past year, especially in school buildings. I am pleased to state that the changes have been made in a thorough and permanent manner, and all buildings erected or now in process of construction are provided with standard systems of ventilation and sanitary appliances. I have visited from time to time during the year the several buildings which were changed and reported upon by me last year, and was pleased to note the good results, and satisfaction received. In fact, the benefits reached much farther than I had anticipated; they have created an interest among committees, superintendents and teachers, and better attention has been given to the care of buildings and grounds and to the regulating of the temperature and humidity in the rooms than heretofore. In connection with these buildings I respectfully insert the following, taken from the last annual report of A. W. Locke, C. E., O. J. Brown, M. D., and H. J. Millard, M. D., Board of Health, town of North Adams. In speaking of the improved sanitary condition and ventilation of Drury Academy and the Church Street school buildings, they say: —

> In both of these buildings it has been a pronounced success By heating a large flue or a brick chimney, the foul air is drawn from the rooms and water-closets and all other parts of the building, and at the

same time pure air is admitted from out of doors through flues, receiving heat as it passes the furnaces if the weather is cold, or, it may be, turned into the rooms without heating if the weather is warm. We found the rooms all comfortable and well ventilated, the basements and water-closets the same. And it should be borne in mind that this is all new. No member of the Board had ever seen a well-ventilated school-house before. We hope to see the same system, or one as good, put into all the other school-houses that are large enough to require it. The small ones should have a system of ventilating stoves.

I have received several letters of commendation from committees and superintendents, which will accompany my detailed report. The ventilation of public buildings and school-houses is an important matter; and, to be a success in the colder season, it must be connected with the warming apparatus. Experience has shown that each room and its location must be carefully and separately considered. In the large portion of school buildings, in my district, the air is warmed by furnaces; some have indirect steam radiation, while others have a combination, using the direct radiation as an auxiliary in the coldest weather. I personally prefer the furnace or all indirect systems, though the combination has many advantages, if the two are so arranged as to work in harmony. But in all cases the arrangement and locations of flues and radiators should be such as to work with Nature's currents, which will insure a thorough circulation of the air in the different parts of the room, a uniform temperature, and a great saving in fuel. And here I wish to say that I have carefully investigated the comparative expense in fuel of warming and ventilating several buildings, the past year, with that of simply warming them for a series of years with direct steam, stoves, and the ordinary way of setting furnaces without an exhaust flue; and I find that the benefits received from the former, when properly applied, cost from ten to eighteen cents per pupil per year more than the old method. Thus the theory often presented, that to warm the amount of air required by our department would bankrupt the towns, does not prove true in these cases.

The town of Stockbridge now has all its school buildings provided for in a thorough manner, and most of the larger towns in the district and several of the smaller ones have from two to four of their largest buildings fitted. All express their highest approval, and a desire to extend the good work farther the coming year. I have several one-room buildings in the back towns, which were visited late in the season, that are being provided, this vacation, with jacketed stoves and brick or galvanized-iron ventilating flues. Three of them are reported as complete, and working satisfactorily; but I have not found time to test them. I report the above in my tabulated sheets as improved. The towns of Lee and Sheffield are now working on two-room buildings, which will be complete for the winter term. The following are the reports in detail of the condition and changes of several buildings, with letters of approval.

Renfrew School, Adams. — Is an eight-room brick building, with hall in roof story. The membership is from forty to fifty-five per room. At the time of my inspection the building was heated by four portable furnaces, each room having a ten-inch tin pipe, with floor register twelve inches in diameter. The outside temperature was 40° above zero, consequently the valves of the registers were mostly closed. The rooms were connected with cold flues in the walls, with registers the same size as above, but no movement of air through them except two, and those but little. The tests for carbonic acid showed from 20 to 33, or an average for the eight rooms of 24.5 parts in 10,000. The sanitary appliances were in the basement, with no ventilation except the window, but were well cared for. The changes are as follows: The old system of heating was removed, six brick set furnaces put in, with ample fresh-air ducts and flues from the furnace chamber to rooms, all of brick, and provided with necessary valves and chains to regulate the temperature. The inlet to rooms is through large wire grills, about eight feet from the floor. Two ventilating stacks, also of brick, were erected, with heaters in the bottom. On the date of my examination one stack heater had not been connected with smoke flue, so a portion of the rooms were better provided for than the others; but the anemometer tests gave an average supply of 1,234 and exhaust of 1,086 cubic feet per minute. The carbonic acid tests ran from 7.3 to 11, or an average of 9.8 parts in 10,000. The sanitary appliances are connected with the smoke flues in the stacks, and work well, being entirely free from odor. With the apparatus complete and running, I see no reason why each room should not receive a uniform basis of 1,500 to 1,600 feet of air per minute.

Green River School, Deerfield. — This was a three-room wooden building, the rooms small and crowded, particularly so in the primary department, the cubical contents giving less than 75 feet per pupil. Coal stoves were used for heating, and no means whatever for ventilation. The building and privies were in bad repair. On the day of my inspection the air in the rooms was so foul, or the state of my stomach was such, that I could remain inside but a few minutes, — it was really sickening to one coming from the open air. I advised the committee to abandon the building, and build a new one. They concurred therewith, and now have a modern, four-room wooden building, with good corridors, cloak rooms, and two separate ways of egress from each room; provided with two brick set furnaces, taking the supply through cold-air rooms; a ventilating stack and flues, with necessary valves and chains to regulate the temperature, and approved sanitary appliances in the basement, ventilated through the smoke flue, and working well. Three rooms have been occupied since September 20. The following results were obtained at a recent visit, with the outside temperature at 48° above zero, and the mixing valves set for cold air: Primary room, sixty present; exhaust 1,942 cubic feet, supply 1,638 cubic feet of air per minute; carbonic acid test, 5.5 parts in 10,000. Intermediate room, forty-six present, one window up at bottom eight inches; exhaust 2,264 cubic feet, supply 1,470 cubic feet of air per minute; carbonic acid test, 7.3 parts in 10,000, which would be reduced one-fourth by closing the window, giving the warmer air a chance to settle and clear the breathing line. Grammar room, seating capacity forty; exhaust 1,843 cubic feet, supply 1,500 cubic feet of air per minute. There were but twenty-two pupils present in this room, and my time was limited, so I did not make a test for carbonic acid. The teachers very much appreciate the improved conditions and arrangements.

Centre and Craneville Schools, Dalton. — These are two-room wooden buildings, of similar design. They were originally heated by stoves, and had no ventilation. Last year they were improved by providing each with a portable furnace, connecting the rooms in the ordinary way of piping, and cutting registers into the smoke flues. The results were not satisfactory to me, and I called for further improvements. During the past season the furnaces have been reset, provided with ample cold-air ducts, flues with valves and chains, and ventilating stacks built. My examination shows that the several rooms are receiving a supply and exhaust ranging from 30 to 35 cubic feet of air per minute per pupil; and the carbonic acid tests show from 8 to 10 parts in 10,000. The management of the apparatus is good.

Chapman Street School, Greenfield. — Is a four-room wooden building, and was heated by direct steam, each room connected with cold flues in the outside walls. No movement of air through them could be discovered. The seating capacity of rooms is from forty to fifty-one. The average carbonic acid test the day of my inspection was 22.25 parts in 10,000. The changes are: A large brick ventilating stack has been built, with heater in the bottom, and the radiation changed to direct indirect. The results have been very satisfactory during the fall weather, and I am in hopes they will continue so through the colder season.

Union Street School, Greenfield. — Is a two-room wooden building. Last year a ventilating stack was built, and one room connected therewith and provided with two jacketed stoves, which worked very well. The present season the stoves have been removed, the other room connected with stack, and furnaces put in the basement. The results are much improved.

Oakman and Eighth Street Schools, Turner's Falls, Montague. — These are both four-room brick buildings, the Oakman having recitation rooms in mansard story. They were heated with portable furnaces, piped in the usual way, with small floor registers; each room was connected with a cold-air flue in outside wall. The seating capacity averaged about fifty-six per room. The day of my inspection was rainy, with an outside temperature of 45° above zero. The valves of most of the registers were found closed, so no supply or exhaust was noted. The carbonic acid tests ran from 20 to 29 parts in 10,000, — an average of 24.2 in the Oakman and 24.7 in the Eighth Street. Outside privies were used, and well cared for. The changes consisted of removing the heating apparatus and privies, substituting large brick-set furnaces in the Oakman, and resetting in brick the old ones in the Eighth Street. Both were provided with good fresh-air rooms, ventilating stacks with heaters in bottom, and large flues to the several rooms, all of brick, and provided with valves, dampers and chains. Flushing sanitary appliances were put in each basement, and connected with the smoke flues for ventilation, which gives them an exhaust of 450 feet in velocity per minute. The anemometer tests of the several rooms were very uniform, ranging, both in supply and exhaust, from 1,400 to 1,600 cubic feet per minute, with the stack fires being lighted after my entering the buildings. Carbonic acid tests were made in three rooms only, for want of time, selecting those with largest attendance, which gave an average of 8.1 parts in 10,000. The conditions accompanying this examination were but fair, — the day being mild, the furnaces running light and the system new to the janitors. With average circumstances, and experience in management, the results would be materially increased.

Miller's Falls School, Montague. — Is a two-room brick building; was heated by two coal stoves, with no attempt made for ventilation. The rooms were small, and seated for thirty-four and thirty-six. The carbonic acid tests gave 22 and 25 parts in 10,000. A brick ventilating stack has been built, with heater in bottom, and each room provided with a "Puritan" jacketed stove, arranged so as to be used as a direct heater at night. The results and arrangement are very satisfactory for that class of work. There is no basement in the building, and the fuel room and privies are in a separate building in rear, and well taken care of.

Blackinton School, North Adams and Williamstown. — This is a union school, located in the village of Blackinton in the above towns. The building is of wooden construction, and has four rooms; there was no basement. The rooms were heated, two by wood and two by coal stoves. The seating capacity was from forty-five to sixty-eight per room. Outside privies were used, and were in bad repair. The day of my inspection the carbonic acid tests in three of the rooms showed 25, and in the fourth 29, parts in 10,000. The changes are as follows: A basement was built and the building provided with two large brick-set furnaces; a ventilating stack with heater in bottom, and ample flues to the several rooms, all of brick, provided with valves and chains. The furnaces take the air from the cold-air room. Flushing sanitary appliances were put in the basement and ventilated into the smoke flue, and work well. At my examination the anemometer tests in rooms show an exhaust and supply running from 1,300 to 1,550 cubic feet per minute per room, without a fire in the stack heater. The carbonic acid tests averaged 9.1 parts in 10,000. This building always had a strong odor, peculiar to schools in woollen manufacturing villages, which is now entirely removed. The teachers and public generally speak of it in the highest praise.

The following is a letter from A. D. Miner, Esq., superintendent of schools, North Adams, who has taken great interest in the working of his school buildings: —

NORTH ADAMS, Mass., Nov. 15, 1890.

Mr. MERRIAM, *State Inspector of Public Buildings.*

MY DEAR SIR: — It gives me pleasure to bear testimony to the good results secured to us by the act "To cause proper sanitary provisions and proper ventilation in public buildings and school-houses." The four school-houses in North Adams which have been provided with good systems of ventilation are greatly appreciated by all, and justify the outlay required to make the changes. We no longer debate the question whether the law should be obeyed, but seek the best and least expensive method of securing the desired end. The law has thoroughly aroused public attention to the subject, awakened a spirit of investigation and study of modes of heating and ventilation, — especially in those who have the charge of the construction of new school buildings. I congratulate you upon the amount of work accomplished in so short a time.

Respectfully yours,

Anson D. Miner.

High School, Pittsfield. — This was a two-story brick building, with a large room seating one hundred and twenty, and two small recitation rooms; cloak rooms and sanitaries in each story, and a smaller room and one recitation room in the roof story. The heating was by direct steam radiation. There was a galvanized-iron flue about twenty inches in diameter through the centre of the building, and the several rooms connected therewith by registers seven and nine inches in diameter. The sanitaries were in small rooms opening from the cloak rooms, with no ventilation, and at times were very offensive. The carbonic acid found in the main rooms was 20 and 22 parts in 10,000, and in the recitation rooms from 20 to 33. My notices called for better sanitary conditions and ventilation, and additional means of egress from the upper stories by an inclosed stairway. The changes are as follows: The recitation-room wing was extended nineteen feet, about doubling the size of those rooms, and a brick stairway built on the rear of that, thus giving each room two positive ways of egress. The steam-heating apparatus and sanitaries were all removed, and the building provided with the Fuller & Warren Company's system of warming and ventilation, and their patent sanitaries in the basement. The day on which my examination of the changes was made, there was no fire in the stack heater, the exhaust was consequently light, averaging about 24 cubic feet per minute per pupil, the supply in the lower rooms averaged about 29, while in the upper stories it was even 45 cubic feet per minute per pupil. With the stack heater running, the velocities would undoubtedly be more uniform, though the carbonic acid did not exceed 8.3 parts in 10,000. The sanitaries were working well, the velocities being 650 feet per minute. The addition to the recitation rooms greatly improve their usefulness.

Centre School, Pittsfield. — Is a two-story wooden building, with one large and two small recitation rooms in each story. The large rooms seat one hundred and fifteen and one hundred and twenty-four, the recitation rooms accommodate about twenty each. The building was heated by direct steam radiation, and the conditions were about the same as the high school; though I found in two of the recitation rooms 40 parts of carbonic acid in 10,000. The sanitary appliances are in small rooms opening from the corridors, and were bad. The changes are as follows: A brick ventilating stack was built, heated by the smoke flue of the boiler, and register connections with each room direct; and a limited amount of indirect radiation is provided for the supply. At my examination the anemometer tests showed the supply and exhaust to be from 12 to 15 cubic feet per minute per pupil, and the carbonic acid from 10 to 12 parts in 10,000, — a great improvement, though not what it should be. The sanitaries were ventilated and much improved. This building is an old one, and will probably be replaced soon. The changes were experimental.

High School, Stockbridge. — Is a two-story wooden building, with four rooms, the seating capacity running from forty-two to sixty-four, and two recitation rooms. It was heated by direct steam radiation; no ventilation. The tests for carbonic acid averaged in the four rooms 19.4 parts in 10,000. By the changes a general rearrangement of stairways and corridors was made, giving each room two separate ways of egress. A large ventilating stack was built, connecting with each room; the steam radiation was removed from two of the rooms, and a large brick-set furnace substituted; the other two rooms and the recitation rooms were provided with ample indirect radiation, to ventilate and to heat in general weather, leaving the direct radiation as an auxiliary. The corridors are heated by direct radiation alone. The flues to rooms are large, made of brick, and provided with necessary valves and chains to regulate the temperature; and the supply is taken through a large cold-air room. The day of my examination was stormy, outside temperature 43° above zero. In the anemometer test the average exhaust was 29 cubic feet per minute per pupil; the supply in the rooms connected with the furnaces was 31, and those with steam 35 cubic feet per minute per pupil. The carbonic acid was from 7.4 to 9.5 parts in 10,000. I advised changes in the stack heater, which will undoubtedly increase the work twenty per cent. The management of apparatus is good. Thus far, outside privies have been used, and are well cared for. The town is about to put in a better water supply, and next year improved sanitary appliances will be provided.

Curtisville School, Stockbridge. — Is a two-room building, with hall in the second story; heated by coal stoves; no ventilation. At my inspection the carbonic acid test averaged 20 parts in

10,000. A brick ventilating shaft has been built, of sufficient capacity for the entire building, with heater in bottom. This winter there is but one room occupied for school purposes, and that has been provided with a medium-sized Richard & Boynton furnace, set as a jacketed stove. The work is satisfactory.

The following is a letter submitted by D. A. Kimball, Esq., cashier of the Housatonic National Bank and chairman of school committee, Stockbridge: —

Housatonic National Bank,
Stockbridge, Mass., Nov. 17th, 1890.

Col. F. W. Merriam, *State Inspector.*

Dear Sir: — I believe the law in relation to the ventilation of school-houses to have been wisely conceived, and I am glad to say that I have never wavered in my support of it. The injurious effects of the poisonous atmosphere of an unventilated school-room are too apparent to need remark. All of our public school buildings, as you are aware, are now ventilated in compliance with the law, and most admirable results are obtained. With greater intelligence and experience on the part of janitors, everything will be all that could be desired in the way of ventilation. Our committee are quite unanimous in their hearty approval of the law, and our people cheerfully submit to the expense.

Yours respectfully,

D. A. Kimball,
Chairman School Committee.

New Buildings now in Construction.

High School, Adams. — This is a brick building, two stories in height, designed for the use of the high school, with the superintendent's office. Each story has a large room, good recitation and cloak rooms. The superintendent's office is in the first story, and teachers above. Each room has two ways of egress. The building is being provided with Mahony's system of warming and ventilation, with improved sanitary appliances in the basement.

Maple Grove School, Adams. — Is a two-story brick building, with one room and large cloak rooms in each story. It is provided with a good-sized ventilating stack and ample flues, and will be warmed by a large brick-set furnace, taking the supply through a cold-air room. The sanitary appliances are in the basement, and will be thoroughly ventilated through the smoke flue. It will be a model building of its size, and is very pleasantly situated. An enclosed fire stairway is on the rear end. It takes the place of an old wooden building of plank construction, without basement, low between joists, and in bad repair. My inspection found in each room carbonic acid of 25 parts in 10,000.

New Building, Dalton. — This is an eight-room brick building, with hall in the roof story; has large corridors and cloak rooms, good egress, and is well lighted. It will be provided with the Fuller & Warren Company's system of warming and ventilation, with their patent sanitaries in the basement. It takes the place of their present high and grammar school building, which consists of three rooms, is unsuitable for the work, and will be abandoned as soon as the new one is complete, — about Jan. 1, 1891. It also provides for the overflow from their other schools.

South Lee School, Lee. — Is a three-room wooden building, with large corridors and ample cloak rooms. The brick stack for ventilation is heated by a cast-iron smoke flue, steam coil and a stove for summer use. The corridors will be warmed by direct steam radiation, and the rooms with a combination of indirect and direct radiation. It takes the place of their present two-room and one-room buildings, which were old and in the most dilapidated state, heated by wood stoves. I advised the committee that it would be the wiser plan to build what they wanted, rather than to repair the old ones. They concurred, and their decision is much appreciated by the people of the village.

New School Building, Orange. — This is a four-room brick building, of good design, with ample cloak rooms and corridors and two ways of egress from each room. It is provided with the Fuller & Warren Company system of warming and ventilation. It was built for additional room.

Morning Side School, Pittsfield. — Is an eight-room brick building, with large corridors and cloak rooms, well lighted, and with good egress. It is provided with the Fuller & Warren Company's system of warming and ventilation, with their patent sanitaries in the basement. It is built to meet the rapid growth of the city.

Inspector Coon reports: —

I have the honor to submit my annual report as to the working of the special laws of the Commonwealth entrusted to me to enforce in the several cities and towns comprising my district. I have examined a large number of public buildings under chapter 426, Acts of 1888, and, as you will see by my tabulated report, issued orders in most cases for fire-escapes, additional stairways or sanitary improvements.

Section one of said chapter directs that certain provisions be made in all buildings coming under the act, such as having adequate means of egress sufficient for all persons assembling, lodging, residing or employed therein, the same to be kept free from obstructions, and at all times ready for use. With hardly an exception there has been a cheerful compliance with such orders, particularly those pertaining to fire-escapes and an earnest desire on the part of owners of such buildings to have them freely comply with the statutes, and to secure the granting of a certificate under section 2; as such certificate is conclusive evidence, as long as it continues in force, of a compliance on the part of the person to whom it is issued with the provisions of this act.

Jan. 16, 1889, in accordance with the requirements of this section, and in the usual course after inspection and when a plan of such building had been secured, I issued to the board of selectmen of Watertown a certificate on the town hall there situate, specifying that the ways of egress or means of escape therefrom from fire were sufficient for four hundred and fifty persons. The certificate was posted, as required by law, in a conspicuous place upon the wall of the room, this limitation being settled upon after several interviews with the chairman of the board for that year. The hall is very small, and the number specified on the certificate a liberal one. The poll-tax payers exceed 1,800 men, and the voters 1,200. Notwithstanding this limitation, the maximum number specified upon the certificate was exceeded in several instances, after the date of issue, by the citizens in town meeting and by public entertainments. The selectmen were duly notified as to this condition, they holding, however, that they had no lawful right to restrict its citizens in attending a town meeting, the town providing no large place in which to hold it. Complaints came to me from the citizens, protesting against the aisles being filled with humanity, and thus cutting off their only means of escape in case of fire or panic. Therefore, it became necessary for me to take some action in the matter; and all the facts were, by your direction, laid before the Attorney-General, his instructions to be acted upon. Therefore, as directed, on the twenty-fifth day of March of the present year a notice was sent to the board of selectmen, revoking the said certificate. The hall, however, was continued in use for public assemblies until it became necessary, by direction of the Attorney-General, to apply for an injunction from the superior court, restraining the use of said hall for more than four hundred and fifty persons, — not, however, until I had witnessed six hundred persons crowded into it, completely filling aisles and passageways, and even to some extent the staircase, thus violating section 1, in not keeping the ways of egress free from obstruction. I had also been informed by reputable citizens that one thousand tickets had been issued for an entertainment to be held therein.

Upon such application, Judge Sherman issued a temporary injunction; but immediately the town, through its counsel, applied to the court for a release from such injunction, in order that the selectmen could call a town meeting; and, among other matters, the citizens could act upon an article relating to the erection of a new hall, sufficiently large to accommodate its twelve hundred voters. No objection being offered by the government, the court granted the release, with the instructions that the case be brought to the attention of the equity court for hearing. The case still being in the hands of the law department, it is hoped that a hearing may soon be had before such court, as it is very important that some decision be rendered by the court as to the meaning of the law, so that in the future an inspector will know to what extent such overcrowding can be prevented.

Should a panic occur in a hall while the aisles and passageways were clear, it would be a most serious matter; but, were they stopped up and rendered unavailable, the result would be apalling. Under the plain reading of the statutes, it seems to me no justification could be offered by the person or authority controlling a hall, for permitting such conditions to exist.

The requirements under chapter 149, Acts of 1888, relating to ventilation of school-houses, has been applied to many buildings in my district, outside of Boston. Twenty-five years ago the superintendent of schools of Boston in his report wrote as follows: —

> In the erection and alteration of school-houses great care should be taken to provide for an ample supply of pure air. This is essential to the preservation of health, which is a matter of prime importance in all school arrangements. In every school-house without proper ventilation there is a slow and subtle poison, which enters the blood and brain, impairing the delicate organs of the body, generating disease, and destroying that healthful physical vigor which is necessary to give success to mental exertion. I regret to say that many of our school-rooms are lamentably deficient in means of ventilation, except by opening doors and windows In school-houses of this kind the teacher and pupil must breathe poisonous air, or the windows must be opened. If there is any question as to whether a cold current is uncomfortable or injurious to any pupil of a school-room, the teacher can solve the question by occupying the place of the pupil for a short time.

Yet, in the face of this statement, no attention has been paid to the subject matter in the alteration of old buildings; and even in some of the houses constructed in later years no care seemed to have been exercised in properly applying the warming and ventilating apparatus. It is a fact that any old buildings can be provided with systems of warming and ventilating, properly applied, at a reasonable cost; and the fact of the buildings being old is no reason why they should not be put in a good sanitary condition, especially when they are large brick structures, as in the city of Boston, and are to be continued in use for years to come.

The present board of school committee are earnest in having the school-houses put in good sanitary condition; but they have been blocked by the refusal of the city council to appropriate money to carry out the requirements of the law. Last year $100,000 was asked for, for the specific purpose of improving the ventilation of school-houses; but the amount was not appropriated. In March, 1889, the school committee passed an order requesting the city council to increase the ordinary appropriation for the department of public buildings, for the financial year 1889–90, by a special appropriation of $50,000, to be devoted during the year to sanitary improvements in the public schools; but the amount was not appropriated. The present year the school committee asked for a large sum for sanitary improvements; but no appropriation has been granted. It is hoped that the authorities will take favorable action in the matter this winter, as the old buildings should not go much longer without improvement.

The towns of Braintree, Hudson, Maynard and Sharon, have each appointed a special committee to consider the matter of school accommodations; and, whether in the erection of new buildings or of enlarging old, the requirements of the law will be carried out. Right here I would like to quote from the last annual report of G. I. Aldrich, superintendent of schools of Quincy and Milton. In speaking of the law, he writes as follows: —

> I think I am safe in asserting that, possibly aside from the John Hancock building, we have no school-house which even approaches the demands which an inspector, in the exercise of sound and reasonable discretion, would make upon the city. The others are substantially without means of ventilation which are of any value. A reasonable compliance with this law involves first a heating apparatus, which will supply school-rooms with abundant quantities of fresh and moderately heated air. It is possible to secure such supply from furnaces; but, as commonly constructed, they supply air very insufficient in quantity, and which comes into the room at a temperature altogether too high. Where rooms are heated by stoves, this supply of pure, fresh air may be secured by surrounding each stove with a jacket, and by bringing in liberal quantities of air by means of ducts leading from the outside to each stove. Secondly, a reasonable compliance with this law involves the provision of adequate means for the removal of the air which has become impure. All ducts designed for this purpose must be of metal, must be of sufficient size to do the work for which they are constructed, and some means must be provided to ensure a steady outward flow of the vitiated air.

It is exceedingly gratifying to me to see the interest taken by the educators in my district, in the subject of warming and ventilating school-rooms, since the law went into operation. Teachers realize the importance of the law; citizens have but to visit some of the schools to be convinced of its necessity.

In the school-rooms mentioned in this report, heated by steam or furnace, the air is admitted to the room near the ceiling at the inner wall, and removed at the floor level upon or near to the same side. After the experience that I have had in school-house work, I am satisfied that this manner of admitting the air to a school-room gives the best results.

Stetson Building, Randolph. — This is occupied on the first floor for high-school purposes, and on the second floor as a public hall. The school-rooms consist of one large room, 48½ by 32 by 10 feet square, having ninety desks, and a membership of eighty pupils and three teachers; also two small recitation rooms seating twenty-five pupils, and one room used as a laboratory. These rooms were formerly heated by stoves. At the time of inspection last winter the conditions were the same as have been told time and again about school-rooms heated with stoves. The temperature one side was 97°; on the other, 66°; centre, 88°. Open windows, and an abundance of impure air, containing carbonic acid as high as 25 parts in 10,000; lots of cold draughts, with their disagreeable effects. These conditions above cited do not exist at the present time; they should not have been tolerated as long as they have. Other than this building, every school-room in the town is heated by a stove, and not the least provision made for removing foul air. With this condition existing, it became necessary for the school committee to make a beginning, as directed by this department. During the past season two large furnaces have been placed in the building, one of which has a hot-water attachment, and this is arranged for heating the laboratory. From each furnace there is a duct 20 inches square entering the main room about 8 feet above the floor; and to each recitation room a duct 15 inches square entering the room at the same distance from the floor. At the floor level, and upon the same side as the inlet ducts, are the foul-air exhaust ducts. From the main room there are two, each 20 by 27 inches square; and from each recitation room one, 18 by 20 inches square. These converge in the basement, and enter a brick shaft with a heater at its base. This flue is divided; an area of 10 square feet is allowed for the rooms, and 3½ square feet as an exhaust flue for the privy vaults, connected therewith by an 18-inch metallic flue. From these vaults heretofore arose foul odors, penetrating the rear corridor. By an examination recently made, I found that, when the lid to a seat was opened, there was a down current with a velocity of 600 feet per minute, making it impossible for any odors to rise to the rooms. On the last day of inspection I found the school-rooms in excellent condition. No odors were noticeable, nor had a window been opened during the entire session. At 11.45 o'clock there were 9.5 parts of carbonic acid in 10,000. Not over fifty pupils are in the room at one time, except at the time of opening and closing. There were about 1,600 cubic feet of air entering the room per minute through the warm-air flues, heated to a temperature of 78°, and leaving the room at a temperature of 73°. The temperature of the outer air was 50°, and of the room 74°. The variation of temperature in different parts of the room did not exceed 1°. When the teachers become familiar with the working of the cold-air mixing dampers, they will have no trouble in keeping the temperature at any desired figure, and getting a large supply of air.

Sumner School, Holbrook. — This is a two-story, four-room building, formerly heated by stoves. On the second floor it is occupied as a high school. During the past season the building has been provided with two furnaces and a system of ventilation; but, the work not being completed, I am unable to report thereon.

Gifford School, Avon. — Is a three-story wooden building, with a hall on third floor. During the past season the Fuller & Warren system of heating and ventilation has been placed therein. The day on which I made an inspection of the building was a very mild one, and not all the schools were in session. Another examination will be necessary before the conditions can be reported.

High Street School, Hudson. — Is a four-room, two-story building. Was inspected last January. I found that everything pertaining to the heating apparatus was worn out and unfit to go through the season. The cold-air ducts to the furnaces were formerly underground, and had caved in; water was standing in the basement; the sanitaries in the rear of the building had become useless. The pipes leading from the furnaces and entering each room were but 14 inches in diameter to the first story, and 11 inches to the second story. The velocity of hot air through the pipes to the second story was at the rate of 750 feet per minute, at a temperature of 250°; and to the first story a velocity of 424 feet per minute, at a temperature of 250°. Each room is 33¾ by 32 by 11 feet square, provided with sixty-six desks. The only means of ventilation was a small wooden duct, of one foot area, located in the outer corner of the room; consequently, in the coldest of weather it became necessary to keep windows open, or stifle. The amount of carbonic acid in the rooms when closed for three-quarters of an hour was from 16 to 22 parts in 10,000. During the past summer the Smead system of heating, ventilating and sanitary closets have been placed in the building. The work has but recently been completed. The company guarantee to supply at least 30 cubic feet of pure air per minute per pupil, and that the temperature shall not vary over 3° in any part of the room during the most extreme cold weather. I have not had an opportunity to make such a test of the additions as I desire.

High School Building, Stow. — Is a brick, one-story, one-room structure, with no cellar, and with accommodation for forty-two pupils, the present membership being thirty-four. At the time of my inspection last winter the room was heated by a wood-burning stove. It was necessary to keep windows open, particularly near the stove; thus the pupils were exposed to dangerous draughts. During the past summer the room has been newly fitted with modern seats and desks, the building put in good repair, including the introduction of the jacketed stove system of heating and ventilation. At a recent visit I found the following conditions: The room is provided with two stoves and one sheet-iron exhaust flue, with a capacity of 816 square inches, in which, two feet from the base, is placed a small heater to rarify the air and create a circulation in the room. The amount of air passing from the room through this shaft at this time was 1,400 cubic feet per minute, or at the rate of 40 cubic feet per minute per pupil. Each stove has an underground cold-air box, leading up under the floor from outside of the building. But one stove was in operation, and through it was passing 1,200 cubic feet of air per minute, heated to a temperature of 90°. The temperature of the room was 71°, and at the outlet 71°. Amount of carbonic acid in centre of room, 7.5 parts in 10,000; in the foul-air shaft, 12 parts. I asked the master of the school how often he had to open the windows; he replied that he had not opened them this season, and strongly commended the change. In conversation with some of the pupils, they expressed feelings of delight in occupying their room without having to resort to windows for fresh air.

The two-room school-house at Rock Bottom has been similarly arranged with the jacketed stoves; but in this case, the rooms being small, but one stove has been placed in each room.

I herewith submit a letter which shows for itself that the jacketed stove can be easily applied to such a building as above described: —

HALE HIGH SCHOOL,
STOW, MASS., Nov. 17, 1890.

Mr. JAMES H. L. COON, *State Inspector of Public Buildings.*

DEAR SIR: — I wish to express my entire satisfaction with the new system of ventilation adopted by our school board at your suggestion. Heretofore there has been no way to obtain pure air except by opening the windows, which of course was impossible in cold weather, and dangerous at any time. The air was very impure all of the time, even when those windows near which no scholar sat were kept open. Upon entering the room in the morning one could detect a disagreeable odor, coming from the decay of animal matter thrown off by the lungs during the preceding day. Of course scholars and teacher had the headache. The scholars were listless during the hours of study and recitation, although they had abundant exercise during the hours of recreation.

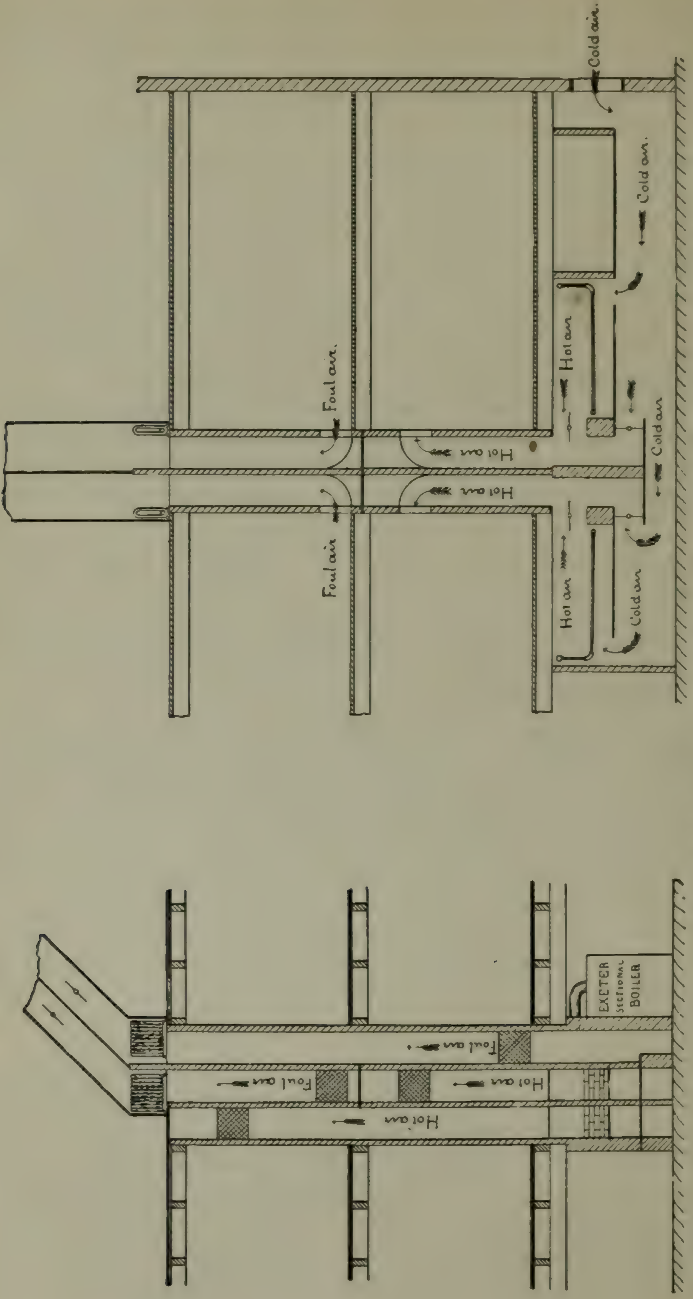
The change is marked. Impure air has not caused me to have the headache, and, so far as I have learned, no scholar has had that trouble this term. I find my scholars quicker-witted and more attentive. There has been a decided increase of improvement in scholarship during the term.

Yours truly,
GEO. W. SNOW,
Principal Hale High School.

Centre School, Walpole. — The superintendent of schools, in his last annual report to the school committee, wrote as follows about the Centre school-house: —

> The most imperative need of this building is a sufficient supply of pure air. As this matter has been fully explained in the reports of Mr. Danforth (the former superintendent), it would be needless for me to say more than to call your attention to the fact that the conditions have not changed since those reports. It seems too bad that an otherwise excellent building should be essentially spoiled by such a poor system of ventilation. I hope this may receive your earnest and immediate attention. The teachers are now wholly dependent upon doors and windows as the only means of ventilation; and, as results from using these, are in receipt of constant complaints from pupils and parents on account of draughts.

There is no question but what this building is an excellent structure. It was built about five years ago, and is two stories in height, containing seven rooms, two of the rooms on the second floor having been made into one, by removing the partition. It is used for high-school pupils. The rooms were heated by direct steam from one twenty-horse-power sectional boiler, and no means of ventilation worthy of mention were provided. It became necessary, by the direction of this department, to provide some means of supplying pure air, and removing the foul air from the room, without resorting to windows. During the past season the school



Sectional views of the manner in which the warming and ventilating is applied to the Centre School-house, Walpole.

committee have placed in the building additional heating and ventilating appliances, which puts it in the list of model school-houses of the country.

The school committee contracted with the Exeter Machine Company of Exeter, N. H., to make the necessary changes and additions, they guaranteeing to do the work to the satisfaction of this department. The work has been in charge of C. C. Leach, mechanical engineer for the company. An additional sectional boiler of twenty horse-power, similar to the one formerly used, has been placed in the building. In the cellar large heating chambers of brick have been constructed, in which are set stacks of iron pipe coils. These stacks have independent valves, so that the heat in either may be cut off when the room is not occupied. Either one or both boilers can be used for the direct or indirect heating. Valves are set so that all the heating can be regulated in the cellar. The air supply is taken to each school-room through a brick flue, 30 inches square, as shown on the diagram, and discharge into the room at a point eight feet above the floors. These flues are located in the centre of the building or at the inner wall, and the exhaust is from the same side 30 inches square, at the floor level. These ascend to the attic by brick shafts, there connect with galvanized-iron pipes, converge, and pass out through the centre of the roof. This was necessary on account of the roof construction. Just above the attic floor a radiator containing 32 square feet of surface is placed in each flue, the heat from which creates the circulation. Two cold-air rooms in the cellar supply the fresh air to the indirect radiator in the heating chambers.

Recently a test was made of these rooms, some of which were occupied by a small number of pupils, while others were up to their full capacity. The estimate for warming and ventilating was made upon a basis of fifty pupils to a room. The temperature of the outer air was 36°, and the result of the test in two of the primary rooms occupied by the largest number of pupils is herewith given. North-east room, first floor, number present forty-six; temperature of room, 72°; amount of warm air furnished, 2,000 cubic feet per minute, at a temperature of 76°; amount removed through ventilating duct, 2,165 cubic feet per minute, at a temperature of 72°; carbonic acid test, 5.5 parts in 10,000. South-east room, first floor, number present fifty-two; temperature of room, 70°; amount of warm air supplied, 2,000 cubic feet per minute, at a temperature of 70°; amount removed through ventilating duct, 2,300 cubic feet, at a temperature of 70°. This condition was continuous. Every room in the building gave a supply of 2,000 cubic feet per minute, and in the high school room each pupil was being supplied with at least 45 cubic feet per minute of warm, pure air. In this room three sides are exposed to the weather, viz., west, north and east sides; yet the temperature varied but 2°: it was 70° at the inner wall, 68° on west side, 68° on north side, and 69° on east side.

NEW SCHOOL BUILDINGS ERECTED DURING THE PAST YEAR, OR NOW IN THE PROCESS OF CONSTRUCTION.

Willard School, Quincy. — Now in process of construction. It is to be a brick, two-story building, containing sixteen rooms, to be heated and ventilated by the Smead system.

Wollaston School, Quincy. — One section, containing four rooms, was completed during the past year. The heating, ventilating and sanitary closets are by the Smead system. I have visited the building but once since its completion. At that time, the rooms were in excellent condition. This building is situated in that part of the city of Quincy called Wollaston.

High Street Primary School, Waltham. — This is a two-story wooden building, containing six rooms, heated and ventilated by the Smead system. A large supply of air is provided for the rooms, the two rear rooms having from 2,500 to 3,000 cubic feet per minute.

Claflin School, Newton. — Is a fine brick structure, containing six rooms. The heating, ventilating and sanitary closets are by the Fuller & Warren system. Although entirely completed up to the writing of this report, the furniture had not been placed; therefore I am unable to report as to the movement of air therein. This building is situated in the Newtonville district.

Waban School, Newton. — Is to be, when completed, a two-story wooden building, containing four rooms. Heating, ventilating and sanitary closets are to be by the Fuller & Warren system. This building is located in that part of the city called Waban.

Centre School, Sudbury. — The school committee, in their report to the town two years ago, wrote as follows: —

> One subject we wish to urge upon your notice, — the need of a new school building at the centre of the town. The present house is not large enough to accommodate the number of pupils who attend, and it is not in a suitable condition as to *sanitation.* The floors are worn, the cracks large and numerous; the rooms on a warm day are too close to

be comfortable, and on a cold one are draughty. Let us not for a moment think of rebuilding or repairing the present edifice, but let all our considerations be, how and when can we erect a new one?

When the old two-room building was inspected by me last winter, I could easily see that the language of the committee was none too strong; consequently, it became necessary to notify the authorities that the building must be put in good condition. The matter was brought to the attention of the citizens at their last annual town meeting, and an appropriation made for the purchase of a new site, and the erection of a new two-story, four-room building. The house will soon be completed, with its arrangements for warming and ventilating properly applied; it will then bring contentment to the teacher and pupils, be a source of pride to the citizens, and an ornament to the village.

Drake School, Stoughton. — When it became necessary, by the direction of this department, to place the old Drake school building in a proper sanitary condition, so as to conform to the requirements of the statutes, it was considered by the school committee as unworthy of any repairs, and a new building should be erected to take its place. In their last annual report they wrote as follows: —

> The need of better school accommodations has become very pressing in the case of the Drake building; and the time has, in our opinion, arrived for the erection of a new building, — one adapted to the wants of our increasing population, of sufficient size and suitable rooms, supplied with modern conveniences as to ventilation, heating and sanitary arrangements, which the present building lacks.

The town complied with the requests of the committee, and a new house has been erected during the past season, being two stories in height, containing six rooms, each 30 by 32 by 11 feet square, ample hallway, two wide staircases separated by a brick partition. The Fuller & Warren system of heating, ventilating and sanitary closets is being placed therein, the company guaranteeing that the requirements of this department shall be fully complied with. The building will soon be occupied.

High School, Norwood. — This is a building designed for high-school purposes only. I think it is one of the best arranged for a small building that I have seen. On the first floor is the large main school-room, with fifty-six desks, the necessary wardrobes, teachers' room, and one recitation-room. By a wide staircase you ascend to the second floor, where there are two recitation-rooms and laboratory. The building is heated and ventilated by the Smead system, each room and hallway having a supply and exhaust duct, with the cold-air mixing damper attachment. The main room has two supply and two exhaust ducts. Forty cubic feet of properly tempered air is being easily supplied to each pupil per minute, in the main or recitation rooms.

Inspector Dyson reports: —

In submitting my report for the closing year, it certainly is not improper to recall to mind the general good feeling which exists among the citizens of the Commonwealth in regard to the so-called inspection laws, and their enforcement by the department which I have the honor to represent in Worcester County, — a county where factories, mills and manufacturing establishments are numerous and varied.

Fully one-half of the plans submitted under chapter 316 of the Acts and Resolves of the year 1888, entitled, "An Act to regulate the erection and construction of certain buildings," were not approved. These disapprovals met with no serious objections, and the changes in said plans and the recommendations suggested by me were accepted and acted upon. This easy compliance with the details which the aforesaid act calls for has been of practical value to individual or corporate owners from a financial point, and has given the occupants of the buildings constructed a feeling of security and protection.

For the violation of chapter 251 of the Acts and Resolves of 1883, entitled, "An Act to secure better provisions for escape from hotels and certain other buildings in case of fire," three prosecutions have been secured. This act meets with persistent opposition, coming entirely from owners or lessees of small hotels and so-called summer boarding-houses. The permanent occupants of these places, help, etc., and the travelling public, welcome the law and encourage its enforcement. Security ought not to depend on the size of a building. I am of opinion that there is no law on our statute books of more value, of more importance in protecting the lives of our citizens, than the aforesaid. The public are comparatively ignorant in regard to the management of hotels. They place their lives in the keeping of regular, recognized proprietors of hotels, large or small. It is the duty of the State to do as she is doing, — protect those lives, as far as possible.

For example, I find that the watchman so called, after the guests and inmates have retired, is employed in washing floors, tending boilers, shifting and moving luggage, or whatever else he is ordered to do. Now, while engaged in these various works, this poor watchman is expected to perform the feat of sleeping between acts, always, of course, waking in the proper time. because he has his daily as well as his nightly work. Thus no one is protected or guarded by this man, and he, poor fellow, never knows what it is to have four solid hours in the arms of Morpheus. To meet such cases, I would suggest that the proprietors of all hotels coming under the provisions of this act be compelled to keep and maintain a watchman's clock, the record of said clock to be submitted to the inspector for examination. By this means the inspector will be able to tell if his orders and requirements have been ignored, and the lives of the public thereby jeopardized.

In case of prosecution, this record should be admitted as evidence. No care, expense or device should be spared to prevent a holocaust similar to that of the Leland House, Syracuse, N. Y. I have ordered a large number of hotel proprietors to provide their houses with electric mechanical gongs, which are the only proper alarms, in my opinion, in case of fire. But, with the best of fire apparatus, if the watchman is obliged to attend to duties other than patrolling the halls and corridors, the gongs would be of little use after the fire had cut off the means of exit.

Proper attention to the enforcement of the provisions of chapter 149 of the Acts and Resolves of 1888, entitled, "An Act to cause proper sanitary provisions and proper ventilation in public buildings and school-houses," has taken a large portion of my time. The question of properly heating and ventilating public buildings is comparatively new, and the interested public have not yet mastered the details. The duty of instructing school committees in this matter has been very pleasant and agreeable. They have always seemed interested in the best methods, and have shown an inclination to act, as soon as possible, up to the spirit and intent of the law. True, at times the cost is taken into account; and men do not like to be told that a building just finished is defective in these essentials. The practical men, however, see that the cost is wholly a first cost, and that, by seeking the inspector before making the changes required, and asking his advice and aid, always at their service, the expense is nominal. Once in, a good method is a saving in fuel, and, what is of more importance, in the lives of our little ones. As compared with the old, the cost of the new method is, as I have said, a first cost, or the cost of the apparatus, rather than the expense of management, in supplying and removing the air once the appliances are set in working order.

In the district during the year many public buildings have been provided with the different systems of ventilation. Worcester, Spencer, Gardner, Athol, Whitinsville, Webster, Uxbridge and Warren have had all of the new buildings completed this year provided with the improved system, and also have improved a number of the old ones.

In the city of Worcester the new Salisbury Street building was occupied for school purposes last September. The school-rooms are heated by indirect radiation, the halls by direct steam. The vitiated air is removed by an exhaust-fan 72 inches in diameter. If deemed necessary, 50 cubic feet of air per scholar per minute can be supplied and removed without any perceptible draughts. This new building, containing ten rooms, erected and furnished complete, including land, at an expense of $73,000, has been declared by experts to be the model building in the country. The Holmes Street school building, of eight rooms, not quite completed, will be heated by indirect steam radiation, and ventilated by the Smith separate-flue system. The same system has been provided for the South Worcester ten-room school building in the same yard. The new four-room addition to the Grafton Street school-house, also the old building, will be heated by furnace, and ventilated by the Smith separate-flue system. The Woodland Street building, of twelve rooms, is to be heated by indirect steam radiation, the corridors and cloak rooms by direct radiation. The vitiated air is to be removed from all of the rooms, including the cloak rooms, by exhaust-fans guaranteed to exhaust from each school-room 1,500 cubic feet per minute. This system is set up and arranged by A. B. Franklin of Boston, Mass. The Edgeworth Street school building, of nine rooms, is heated by furnaces and ventilated by the Smith separate-flue system. These buildings have also been provided with improved sanitary closets, with separate ventilating system for the same. The amount appropriated by the city of Worcester for heating and ventilating the Woodland Street, Edgeworth Street, and South Worcester houses was $15,000. I have not had the desired opportunity to thoroughly test the systems just named, but thus far I am satisfied that they will more than supply and remove the 30 cubic feet per minute per scholar, as called for in the contracts.

The town of Spencer has expended this year, in improving the heating, ventilating and sanitary systems in its school buildings, more than $6,000, not including the cost of sewer connections. In this connection let me say that I consider Spencer the banner town for school-house janitors. Janitors are now, with our various systems of heating and ventilation, important persons in schoolhouse management. Men of good judgment are needed, and their positions should be fairly remunerative and permanent. At a recent visit to Spencer, I found every janitor on duty, attending faithfully to his work; and each man vied with his fellow in the neatness and tidiness of the surroundings of his buildings. What impressed me very much also was the fire drill in all of the schools of the town. Each room is supplied with an electric bell, and the teacher of any room in a building, by pressing a button, can without a word of command march the children out into the yard with ease, quietness and expedition. I am so much in favor of what I saw then that I do not hesitate to say some such system should be adopted in all of our large city schools.

The town of Gardner has also remodelled the West and Pleasant Street school buildings, of four rooms each. One is heated by hot water and steam, both direct and indirect radiation; the other by furnace. Neither is as yet completed.

Whitinsville, in the town of Northbridge, has just completed a new high-school building, heated and ventilated by the Smead warming and ventilating system, which is giving excellent satisfaction.

The town of Uxbridge has begun to improve its high-school building by putting in a furnace for warming the supply of fresh air, also enlarging the ventilating flues.

The town of Warren has put in a new furnace system of heating and ventilating in three of the grammar-school buildings.

One great mistake made in some of these towns is that their systems do not allow any control of heating and ventilating by the teacher. This is a serious matter, especially where janitors are not compelled to remain in the building during school sessions.

Athol has erected a new four-room building, heated and ventilated by the Smead warming and ventilating system.

Webster has remodelled the School Street four-room building, heated and ventilated by the Smead warming and ventilating system. In the basement of the building are the Smead sanitary closets. The entire building has been transformed from a poorly heated, badly ventilated building, into a school, as one of the teachers remarked, "second to none" she was ever in. At a recent test, made November 10, I found the average temperature of the rooms 71°, the amount of air supplied per scholar per minute 38 cubic feet, and the amount removed per minute per scholar 46 cubic feet. The carbonic acid test showed, fifty minutes after recess, 7.15 parts in 10,000.

In addition to the city and towns enumerated, many others are pulling into line, and giving ventilation and sanitation earnest study. Committees find that the public are sometimes ahead of them in these vital matters, and in such places and cases the rapid movement of the committees is professional. When it is fully realized that the inspectors are the humble assistants of the public, much of the friction now evident will pass away.

SPENCER, MASS., November, 1890.

To J. M. DYSON, Esq.

RESPECTED SIR: — Yours of the 10th instant received. Since you became officially acquainted with Spencer public school buildings, they have many of them, thanks to the generosity of the voters and your intelligent advice, undergone considerable change. Everything that could be done for better ventilation, for increased facilities in the sanitary arrangements, and for general cleanliness, has been willingly and effectually done.

In Spencer there are eighteen school buildings, with seating capacity of twenty-five hundred children. A janitor who devotes all his time, including Saturdays, to the duties of his position, is employed for each building. The welfare of a school depends nearly as much upon the ability of the janitor as upon that of its teacher. The idea that anything is good enough for a school-house is fast losing its hold on the people, and a "sound mind in a sound body" principle is being recognized in public buildings more than ever. Experience teaches me that, as a general rule, a good, clean, well-ventilated building assists greatly in the make-up of a good school.

To some teachers in our State, the thermometer, the rules for proper ventilation and change of atmosphere in a room, are things of too small import, while stress is laid upon lesser things. This is wrong. Give teachers with common-sense and good methods, intelligent and faithful janitors, good supervisors, buildings planned and made as the law directs, and good schools must eventually follow.

The Legislature has taken a step in advance, and towns and cities are falling into line. Those connected with the sanitary department of school buildings can look to some one for assistance and advice.

Respectfully,

F. L. JOHNSON,
Superintendent of Schools, Spencer, Mass.

GARDNER, MASS, NOV. 15, 1890.

JOS. M. DYSON, Esq.

DEAR SIR: — Your favor of 13th instant at hand. I will most cheerfully comply with your request therein, but would like to do so at a little later date, when we will have our improvements in ventilation in more complete condition, and can speak more definitely concerning their workings. I expected to have had them in complete working order long before this, and intended to have asked you to come over and inspect them, and test their workings with me. Hope to have you do so later.

Our present term has but five days more, and I intend to have them in more complete working order when schools open after recess. The first time I am in Worcester again, will call at your office, and hope to see you.

Very respectfully yours,

J. M. MOORE.

NORTH BROOKFIELD, Nov. 13, 1890.

JOSEPH M. DYSON, *Inspector of Public Buildings.*

Permit me to say that the ventilation of our eight-room school-house by your order of June, 1889, is giving ample satisfaction to all interested in the wholesome sanitary condition of the building. We adopted the Sturtevant blower, at an expense of a little less than $850, which answers the double purpose of ventilation and heating. The building now is properly ventilated and heated at no greater expense than it was formerly heated. The present improved and healthful condition of the building is an adequate justification of the order to ventilate, and demonstrates the wisdom and justice of the law that authorized it.

Yours truly,

L. EMERSON BAMER,
Chairman of North Brookfield School Committee.

Inspector Moore reports: —

In the enforcement of the provisions of chapter 316, Acts of 1888, relating to the construction of buildings, some difficulty has been met with, in inducing some of the architects to file the plans or notify the owners of the requirements of the law, before the building was commenced; and in some cases expense has been caused by making changes which could have been avoided had the plans been furnished the inspector in the first place. In some cases they were only furnished when it was found that recourse would be had to the court for an injunction to prevent further work being done on the building. In most cases, however, the architects were ready and willing to do all in their power to assist, and cheerfully complied with the law. In some cases, where the architects were in favor of a plan that would not only add to the safety of the lives of the occupants, but also prevent in a great measure the danger from fire, they have met with opposition from the owners, who desired to reduce the cost, regardless of the danger to life and property, and who seemed to think, if the building could be constructed cheaply, that was all that could be desired.

In the ventilation of school buildings there has been considerable progress made. The more generally the necessity of good ventilation becomes recognized, the easier it becomes for the different towns and cities to secure the means of carrying out the orders of the inspectors. While some towns have failed to provide sufficient money to carry out the changes required by law, others have cheerfully made the necessary appropriations, and have commenced a systematic improvement of their school buildings. In some towns appropriations were made that were not sufficient to properly do the work required; and, rather than spend the money to put in ventilation and heating that would not be sufficient, the school committee have waited until sufficient money can be obtained the coming year. In most cases where better ventilation has been provided this year, the greatly improved condition of the school-rooms is very apparent, and words of commendation are heard from both teachers and pupils. In some cases the best results possible under the improved conditions have not yet been obtained, owing to the fact that some janitors have not yet acquired the necessary experience in managing the fires and valves for regulating the heat. This difficulty will probably soon be remedied, where careful and intelligent men are employed. The mere ability to shovel coal into a furnace is not all that is required in a janitor. Intelligence, good judgment and faithfulness must be considered of more account than mere manual labor. In one case that came to my knowledge a serious accident was prevented, more by good luck than any judgment on the part of the janitor. It was in case of a school building heated by steam, and where, either through ignorance or neglect, the water was allowed to run out of the boiler till it was low, and the janitor, when it was discovered, instead of drawing his fire, attempted to put cold water in. That boiler is now in charge of another man.

An examination of the following school buildings, made before the weather became cold, shows the condition of some of the recently ventilated ones. More satisfactory results will be obtained after a lower temperature is reached, and the teachers and janitors become accustomed to the new arrangement of the heating and ventilation.

Ashland, New High and Grammar School-house. — This is a two-story wooden building, having, in the first story, two school-rooms, two clothing rooms for each sex, and a hallway; in the second story, one school-room, one recitation room, one laboratory, one clothing room for each sex, one superintendent's room, one teacher's room and a hallway. In the basement are rooms to be used by the pupils at recess in stormy weather, also a furnace room, and Fuller & Warren sanitary closets for each sex. The building is heated by two No. 7 Magee furnaces in the basement, and the fresh air is supplied by a galvanized-iron duct from the north-westerly corner of the basement. The warm air is conveyed to the rooms in galvanized-iron ducts, and enters the school-rooms by passing through inlets in the inner walls, eight feet above the floor. In the lower hallway is provided a hot-air register in the floor. In the recitation room the warm air enters through the inner wall and at the top just below the ceiling. The foul air is taken out through a register in the floor. In the laboratory the air enters, and is also removed, through registers in the floor. The ventilating chimney is of brick, 6 feet 4 inches by 4 feet, inside measurement, and is divided into three ducts, one for the smoke and sanitary closets and two for ventilation. The top of this chimney has been covered with stone flagging, and has two openings on each side, under the flagging, which are partly closed by louvers, an arrangement which will not produce the best results. In the bottom of the ventilating chimney or stack is placed a stove for heating the outgoing air and causing a draft. Better results are obtained where the heater is raised above the point where the foul-air ducts enter the bottom of the ventilating chimney. The foul air is taken from the floor of the school-rooms in the first story in brick ducts, and enters at the bottom of the ventilating chimney. From the upper story it is taken from the school-rooms at the lower part of the inner wall into the ventilating flues. A separate outlet leads into each flue; these outlets are provided with galvanized-iron deflectors, to cause an upward draft.

The first-story south-westerly room is 34 feet by 30 feet 8 inches by 12 feet high. There are three large windows on the westerly side, and four smaller ones near the top of the southerly side, with two doors leading to the clothing rooms and hallway on the northerly side. The warm, fresh air is taken in near the centre of the northerly side, in the rear of the teacher's platform, and eight feet above the floor. The foul air is taken out through a register in the floor in the north-westerly corner of the room. An examination made of this room on a rainy day, with a light south-easterly breeze, the outside temperature 47°, a moderate fire in the furnace and a good fire in the ventilating chimney heater, gave the following results: There were fifty-six seats in the room; the membership twenty-eight (upper-grade grammar-school pupils), and twenty-eight pupils and two adults present. The warm air was coming in at the inlet, which has a net area of 4.19 square feet, at a temperature of 84°, and a velocity of 175 feet per minute. The foul air was going out at the outlet, which has a net area of 4.89 square feet, at a temperature of 72°, and a velocity of 252 feet per minute. The temperature of the room at the breathing line was 70° on the easterly and westerly sides, and 69° on the southerly side. The afternoon session commenced at 1.15 P.M., no recess. The doors and windows were closed, and the cold-air mixing valve wide open, during the session. At 3.40 P.M. a test for carbonic acid, made at the centre of the room, about eighteen inches above the breathing line, gave 8 parts in 10,000. The air was coming in at the inlet 13.09 cubic feet for each seat, 26.18 for membership, and 24.44 for each person present. There was going out through the outlet 22 cubic feet per minute for each seat, 44 for membership, and 41.07 for each person present.

The first-story south-easterly room is 30 feet 9 inches by 29 feet by 12 feet high. Three large windows on the southerly side and four smaller ones near the top of the easterly side; two doors in the northerly side. All the doors in the school-rooms and clothing rooms have transom windows over them, which can be closed with a rod held in place by a screw clamp. These were closed during the session when the examinations were made. The warm, fresh air is brought in through a wire-netting-protected opening near the centre of the northerly side, and eight feet above the floor. The foul air is taken out through an iron register in the floor in the north-west corner of the room. An examination made of this room, under similar conditions as in the adjoining room, gave the following results: There were forty-nine seats; the membership forty-six, and thirty-seven pupils and two adults present. Warm, fresh air was coming in at the inlet, which has a net area of 4.19 square feet, at a temperature of 72° and a velocity of 176 feet per minute. The foul air was going out at the outlet, which has a net area of 4.89 square feet, at a temperature of 72°, and a velocity of 220 feet per minute. The temperature at the breathing line was, on the easterly side, 70°; southerly, 69°; westerly, 71°. A test for carbonic acid, made at 3 P.M., there having been no recess since beginning of the session at 1.15 P.M., gave 7.7 parts in 10,000. There were coming in through the inlet, per minute, 15.05 cubic feet for the seats, 16.03 for membership, and 18.9 for persons present. There were going out through the outlet 21.95 cubic feet per minute for seats, 23.38 for membership, and 27.61 for each person present. (Pupils lower-grade grammar.)

The high-school room, which is situated in the south-westerly part of the second story, is 39 feet by 34 feet by 12 feet (a deduction of 8 feet 4 inches by 5 feet by 12 feet should be made from this, on account of a break in the south-easterly corner). There are three large windows on the westerly side, and four smaller ones near the top of the southerly side; also two in the south-easterly corner. Two doors connect with the clothing rooms and hallway, and one each with the recitation room and laboratory. The fresh, warm air is brought in near the centre of the northerly side, and in rear of the teacher's platform, eight feet above the floor. The foul air is taken out at two outlets in the bottom of the northerly side, the centre of one outlet being 5 feet 9 inches, and the other 10 feet 3 inches from the easterly side of the room. These outlets enter into separate brick ventilating flues on each side of the smoke flue. Each of these flues also furnished ventilation for a room in the first story. These outlets are each provided with a galvanized-iron deflector, extending up eighteen inches above the top of the outlet, and into the ventilating chimney three feet (being the depth of the smoke flue). Each outlet has a net area of 2.44 square feet, and is protected, as is also the inlet, by one-eighth inch wire grating. An examination of this room, made under similar conditions as the two other rooms, gave the following results: There were fifty-six seats; the membership thirty-eight pupils (high-school grade), and twenty-seven pupils and three adults present, one class of eleven being in the recitation room. Fresh, warm air was coming in at the inlet, at a temperature of 90°, and a velocity of 162 feet per minute. Foul air was going out at the outlets, at temperatures of 72° and 74°, and velocities of 132.4 and 143.6, or an average of 138 feet per minute, the higher velocity being at the outlet farthest from the inlet. There were coming in through the inlet 15.76 cubic feet for the seats, 23.23 for the membership, and 29.43 for each person present. There were going out through the outlet 12.02 cubic feet for the seats, 17.72 for membership, and 22.44 for each person present. A test for carbonic acid, taken at the center of the room, and two feet above the breathing line, gave 5.9 parts in 10,000. This test was made at 2.30 P.M., one hour and a quarter after the commencement of the session. There had been no recess.

In the basement there was no odor from the sanitary closets. Without a fire in the furnace at the outer end of the line of closets, there was a velocity of 902 feet per minute out through the closets.

Bellingham, Massey School-house. — This is a two-story wooden building, the upper story being unoccupied. The lower room is 29 feet 8 inches by 29 feet 1 inch by 11 feet 5 inches. It contained 45 seats, and had a membership of thirty-six pupils, of ages varying from under five to fifteen years. It was heated by one coal stove near the centre of the westerly end of the room, the chimney being at the centre of the easterly end. The ventilation was by the windows and doors, and in the chimney was a five-inch round ventilating register, which was closed and could not be opened. An examination was made on a clear day, with a light north-westerly breeze, and the outside temperature 45° degrees. There were present twenty-one pupils and two adults. One window on the northerly side was open three inches at the top, the other windows and the doors closed. The temperature at the breathing line was 62° on the easterly side and 69° on the southerly side of the room. A test for carbonic acid, made one hour and ten minutes after commencement of the afternoon session, gave 16 parts in 10,000.

During the summer vacation changes were made. A No. 18 Puritan jacketed stove, which has an opening at the top between the stove and the jacket of 3.58 square feet, was placed in the north-westerly part of the room, and the air is brought up through an opening in the floor, and delivered into the room six feet above the floor ; there is no valve for closing the opening. The coal stove was retained, placed in the south-westerly corner, and both stoves connected with the new ventilating chimney built at the centre of the easterly end of the room. This chimney is of brick, and is provided with a cylinder stove, placed above the outlet, which has a net area of 4.42 square feet. The lower part of the chimney is enlarged to give an area sufficient to allow for the space occupied by the cylinder stove, and an iron door is provided for tending the cylinder stove. The outlet is protected by a grating of one-eighth wire and one and one-half inch diamond mesh, and is at the bottom of the front of the ventilating chimney. An examination of this room, made on a cloudy day, the air heavy and a hardly perceptible breeze, the outside temperature 61°, gave the following results : There were present thirty pupils and two adults (the membership being thirty-six). There was a light fire in the jacketed stove and a moderate fire in the stove in ventilating chimney. The doors and windows were closed ; the temperature at the breathing line was, on the northerly, easterly and southerly sides, 70°, and on the westerly side 71°. Fresh air was coming in at the jacketed stove at a temperature of 93°, and a velocity of 175 feet per minute. Foul air was going out at the outlet at a temperature of 70°, and a velocity of 162 feet per minute. There was coming in at the inlet per minute 13.92 cubic feet for the seats, 17.4 for the membership, and 19.57 for each person present. There was going out at the outlet 15.91 cubic feet per minute for the seats, 19.89 for the membership, and 23.37 for each person present. No test for carbonic acid was made, but, as far as could be judged by the absence of disagreeable odors, the air appeared quite fresh and good. If the cap over the top of the ventilating chimney were removed, better results would be obtained.

South Framingham, No. 2 Primary School-house. — This is a one-story wooden building, with one school-room in the northerly end, two clothing rooms or entries and one fuel room in the southerly end. There are four windows on both the easterly and westerly sides of the school-rooms, and one in each clothing room. There are two doors on the southerly end. The room is 33 feet 4 inches by 29 feet 3 inches by 12 feet 1 inch. There were fifty-seven seats, and a membership of sixty-three pupils, of an average age of about seven years. The heating was by one coal stove near the centre of the southerly part of the room, and near the teacher's desk. The ventilation was by means of the windows and doors, and a small ventilating shaft in the southerly end of the room. There were two openings into this, one at the top and one at the bottom. The top opening was 6 by 18 inches, and could only be forced half-way open. The one at the bottom was worse. An examination was made of this room, on a rainy day, with a strong breeze blowing, the outside temperature 48°. Twenty-nine pupils and two adults were present, the smaller children having been dismissed at recess, which closed fifteen minutes before this examination. All eight of the windows were down three inches at the top, the ventilator openings were nearly closed, and the doors closed. There was a good fire in the stove. The temperature of the room was 67° on the easterly side, 69° on the westerly, and 74° on the southerly side at the breathing line. A test for carbonic acid, made fifteen minutes after recess, gave 14 parts in 10,000, both at the centre and the northerly end of the room, one foot above the breathing line. About three feet from the ceiling and nearly over the teacher's desk, it was 18. The windows were closed twelve minutes, and another test made, which showed at the centre of the room, and about two feet above the breathing line, 22 parts in 10,000.

During the summer the building has been heated and ventilated in accordance with plans furnished by W. E. McClintock, C. E., of Boston. A portable furnace has been placed a little west of the centre of the southerly end of the room. The fresh air is brought in under the floor in a galvanized-iron duct, and passes up inside the furnace jacket, and is delivered into the room about 8 feet above the floor, through an opening having a net area of 2.18 square feet (which is not large enough), and which is inclined at an angle of about forty-five degrees towards the centre of th room. A cold-air duct leads off from the main inlet duct through the fuel room, and joins the hot-air duct above the furnace. This is provided at its junction with a valve and chain, for the teacher to mix the hot and cold air and regulate the temperature. A brick ventilating shaft has been built in the fuel room adjoining the school-room. The smoke pipe from the furnace passes up the centre of this shaft, and a small stove is placed in the bottom, which is enlarged to give additional area where the stove is. An iron door is provided, giving an opportunity to tend the small stove. The foul air from the school-room is taken out and into the ventilating shaft through a wire-grating-covered outlet, having a net area of 4.91 square feet, and situated at the bottom of the centre of the southerly side of the school-room. An examination, made on a clear day, with a gentle westerly breeze and the outside temperature 50°, gave the following results: There were sixty-four seats; membership fifty-four, and present thirty-one pupils and two adults. The smaller children had been dismissed at recess, up to which time there had been forty-two pupils and one adult present. The doors and windows were closed. There was a moderate fire in the furnace, no fire in the stove in the ventilating shaft. The cold-air valve was half open. The only heat for the ventilating shaft was coming from the furnace smoke pipe. The fresh air was coming in at the inlet at a temperature of 106°, and a velocity of 249 feet per minute. The foul air was going out at the outlet at a temperature of 70°, and a velocity of 95.2 feet per minute. The temperature of the room at the breathing line was on the westerly side 67°, and on the northerly and easterly sides 68°. There was a six-inch round smoke pipe, open at the end, near the top of the room, which extended more than half way the length of the room. Air was passing out here, but the velocity was not taken. A test for carbonic acid, made near the centre of the room, and about one foot above the breathing line, gave 7.7 parts in 10,000. There was coming into the room through the inlet 8.48 cubic feet of air per minute for the seats, 10.05 for the membership, and 16.45 each for the persons present. There was going out through the ventilating outlet 7.3 cubic feet per minute for the seats, 8.65 for the membership, and 14.16 for each person present.

South Grammar School. — This is a two-story brick building, containing two school-rooms in each story, and separated by two entries in each story, with a brick wall between, but with one connecting door. The rooms in the lower story are 44 feet 5 inches by 33 feet 5 inches (including the clothing rooms, which are practically in the school-rooms), and 12 feet high. The north-easterly room has fifty and the south-westerly room fifty-five seats. The rooms in the second story are the same size as those below, but are 12 feet 10 inches high. The heating of each room was by two direct steam radiators, placed one each in front of the middle side windows; there being three windows each in the northerly and southerly sides, and three small ones near the top of the room in the outer end. The two south-westerly rooms are of the same size as the two north-easterly rooms, and are each provided, in addition to the direct radiators, with rows of steam pipe extending across the entire westerly side. The pipes for conveying the steam to the radiators and pipes in the rooms above, pass up through the lower rooms, and furnish some additional heat. There are two direct radiators in each lower entry. The ventilation of each room was by the windows and four ventilating ducts, two in the northerly and two in the southerly side-walls, and near the corners. These ducts passed up into the attic, and were each provided with a register having a net area of 1.3 square feet. No means were provided for heating or moving the air in these ducts. On the top of the building, near the centre and connecting with the attic, is placed a ventilating turret, five feet square, and provided with louvers on each side.

An examination was made of the lower north-easterly room on a clear day, with a moderate breeze, the outside temperature 45°, and the temperature of the room 71°; steam turned on in the raditors; two windows each on the northerly and southerly sides down four inches each at the top; all the ventilating registers open, and the two doors closed. There were forty-one persons present, and a test for carbonic acid, made one half-hour after recess, gave 15 parts in 10,000. The room had been aired out at recess.

During the past summer this building has been ventilated and heated in accordance with plans made by W. E. McClintock, C. E., of Boston. The direct steam radiators and pipes have been retained, to be used as auxiliary heaters in the coldest weather. The same boiler has been retained, and additional heating surface has been provided by indirect radiators, placed in two cold-air rooms in the cellar, one for the north-easterly and one for the south-westerly part of the building. Each cold-air room has two indirect radiators, partly enclosed in galvanized iron, and each of which furnish air for one room. There are two openings into each cold-air room from the outside, and on the southerly side of the building. Each duct leading to a school-room is provided with a mixing valve, connected with the school-room by a chain, to enable the teacher to regulate the temperature, but not to cut off the fresh-air supply. A metallic foul-air chamber, 5 feet 6 inches by 5 feet 4 inches, inside measure, has been constructed in the attic, and is entered at the bottom of two sides by the four galvanized-iron foul-air ducts from the school-rooms. These ducts, where they enter the foul-air chamber, have each an area of 5.44 square feet. Above these ducts are placed across this chamber two rows of 1⅝ inch iron steam-pipe, connected with the boiler. An auxiliary hot-water heater is also placed in the basement, with an expansion tank in the attic. Valves are provided, by means of which the connection with the boiler is shut off, and connection made with the hot-water heater when the boiler is not in use. The foul air is taken from the school-rooms through wire-grating-covered outlets at the bottom and near the centre of the inner partition, in the rear of the teacher's platform.

An examination of the lower north-easterly room, after the changes in heating and ventilating were made, and on a clear day, with a very light westerly breeze, the outside temperature 50°, gave the following results: There were fifty seats, a membership of fifty-one, and forty-nine pupils and three adults present. The doors and windows were closed, the direct radiators closed, and the cold-air valve wide open. The temperature at the breathing line was, on the northerly side, 71°; easterly side, 72°; and southerly side, 74°. The fresh air was coming in at the inlet, which is about 8 feet from the south-westerly corner of the room, 8 feet above the floor, and has a net area of 4.26 square feet. The temperature at the inlet was 74°, and the velocity 169 feet per minute. The foul air was going out at the outlet, which has a net area of 5.06 square feet, at a temperature of 74°, and a velocity of 200 feet per minute. A test for carbonic acid, made at 3.30 P.M., three-quarters of an hour after the close of recess, gave 8.7 parts in 10,000. There was coming in through the inlet 14.39 cubic feet of air per minute for the seats, 14.11 for the membership, and 13.88 for each person present. There was going out through the outlet 20.24 cubic feet of air per minute for the seats, 19.84 for the membership, and 19.46 for each person present. The temperature of the room was higher than it ought to be, on account of the fire under the boiler being too brisk, a new janitor having just taken charge of the building, and not yet being accustomed to the working of the system of ventilation. This matter will undoubtedly soon be regulated, as the janitor appears to be a competent and experienced man.

An examination of the north-easterly room in the second story gave the following results: Outside temperature, 52°. Sixty-five seats, a membership of sixty-seven, sixty-four pupils and two adults present. The temperature at the breathing line was 71° on the northerly and easterly sides, and 72° on the southerly sides. The inlet, similarly located as in the room below, and having a net area of 3.91 square feet, was furnishing fresh air at a temperature of 82°, and a velocity of 296 feet per minute. Foul air was passing out at the outlet, which has a net area of 5.06 square feet, at a temperature of 75°, and a velocity of 202 feet per minute. The doors and windows were closed, and the direct radiators shut off. The cold-air valve was wide open. There was coming into the room through the inlet 17.8 cubic feet of air per minute for the seats, and 17.27 cubic feet for the membership. There was going out through the outlet 15.72 cubic feet per minute for each seat, and 15.25 for the membership.

In the south-westerly room, first story, with similar inlet and outlet as the opposite room in the same story, there were fifty-five seats, membership fifty-five, with fifty-three pupils and two adults present. The temperature at the breathing line was 70° at the northerly and westerly sides, and 72° at the southerly side. The doors and windows were closed, the direct radiators shut off; two of the old ventilating flues had not been closed up at the bottom, and air was coming in at each, but with hardly velocity enough to turn the anemometer wheel. The cold-air valve was half open, and the fresh air was coming in at the inlet at a temperature of 118°, and a velocity of 234 feet per minute. The air was going out at the foul-air outlet at a temperature of 74° and a velocity of 281 feet per minute. There was coming into the room through the inlet 18.12 cubic feet per minute, both for the seats and the membership. There was going out through the outlet 25.49 cubic feet per minute, both for the seats and the membership.

In the south-westerly room, second story, with similar inlet and outlet as the opposite room in that story, were fifty-four seats, a membership of fifty-three, with forty-seven pupils and two adults present. The doors and windows were closed, the direct radiators shut off, and the cold-air valve wide open. As in the room below, two of the old ventilating ducts had not been closed up, and cold air was coming in, but at a very low velocity. The temperature was 72° on the northerly and westerly sides, and 75° on the southerly side, at the breathing line. The air was coming in at the inlet at a temperature of 88°, and a velocity of 282 feet. The foul air was going out at the outlet at a temperature of 78°, and a velocity of 258 feet. There was coming into the room through the inlet 20.4 cubic feet for the seats, and 20.8 for the membership. There was going out at the outlet 23.84 cubic feet for the seats, and 24.29 for the membership.

Franklin, Mason Street School-houses. — These are two wooden two-story school-houses, built from the same plan and heated and ventilated in the same manner. The school-rooms are in the southerly part, with the entries and clothing rooms in the northerly part. The school-rooms are 30 by 29 by 12 feet. The easterly building has fifty-two seats in the lower and forty-six seats in the upper room. Each room was heated by a coal stove, and the ventilation of each building was attempted by a Robinson ventilator on the top of the building, with ducts to each school-room. In the easterly building, in the lower room, was a top and bottom register 8 by 12 inches (with a deduction of ⅓ for register face), in the inner partition wall behind the teacher's platform.

An examination was made on a clear day, with a light breeze, the outside temperature 42°. There was a membership of forty-five (sub-grammar grade), with thirty-four pupils and two adults present. There was a moderate fire in the stove. The temperature at the breathing line was 72°, 72° and 74° on the three outer sides of the room. The highest velocity at either outlet was 20 feet per minute. The room had been aired out forty-five minutes before the test for carbonic acid was made. The two doors and six windows (three on the easterly and three on the westerly sides of the room) were closed, and the top and bottom ventilators both open. A test for carbonic acid, taken near the centre of the room, and about two feet above the breathing line, gave 25 parts in 10,000.

In the upper room, with similiar heating and ventilation as in the room below, but with two windows raised three inches, by boards placed under the lower sash, there was a membership of forty pupils (sub-grammar grade), and thirty-seven pupils and three adults present. No movement of air was perceptible at the ventilators. There was a moderate fire in the stove, and the temperature at the breathing line was, at the three outer sides, 74°, 74° and 76°. The room was aired out at recess, and, one hour and ten minutes after, a test for carbonic acid, near the centre of the room and about two feet above the breathing line, gave 33 parts in 10,000.

In the upper room of the westerly building there were fifty seats, a membership of forty pupils (sub-grammar grade), and thirty-seven pupils and two adults present. The top and bottom ventilating registers were both open (each had a net area of 64 square inches), and two windows raised three inches each, by window boards placed under the lower sash; the other four windows and two doors closed. The anemometer did not show any movement of air at the ventilators. The temperature at the breathing line was 74°, 74° and 76° on the three outer sides of the room. The outside temperature was 42°. At recess the room was aired out, and a test for carbonic acid, made one hour and ten minutes after, gave 33 parts in 10,000, at the centre of the room and about one foot below the breathing line.

During the summer vacation new heating and ventilation was provided in each building, the work being done by C. M. Drennan & Company of Boston. A Gold's Hygiean heater (furnace) was placed in the cellar. A cold-air room was divided off in the northerly end, under the entry and clothing room, with openings to the outer air on the easterly and westerly sides. The heater was placed in the cold-air room, but with the door for tending in the cellar, and outside the cold-air room. The heat from the smoke pipe was utilized for warming the air in the cold-air room, by making several turns before entering the smoke stack, which is of ten-inch cast-iron pipe. If desired, the heat and smoke can pass direct to the cast-iron smoke stack, by turning a damper. The fresh air comes in under the bottom of the furnace, which is encased in brick, and passes up to the school-room in the first story, through two twenty-inch round tin pipes, and enters the room eight feet above the floor on each side, and in the rear of the teacher's platform, at the northerly end of the room. The warm air passes up to the second story school-room through two eighteen-inch round tin pipes, parallel to the pipes leading to the first story. The inlets into the lower room are 20 by 26 inches, with a net area each of 2.4 square feet, allowance being made for the register faces. The upper room inlets are 20 by 20 inches, and with a net area each of 1.85 square feet. The lower part of each warm-air pipe is provided with a mixing valve, to allow the entrance of air from the cold-air chamber. These valves are provided with a chain and wires leading to each room, to be operated by the teacher, to regulate the heat without cutting off the fresh-air supply. A foul-air shaft or ventilating chimney of brick, 41 by 41 inches, inside measurement, has been built up through the entries and clothing rooms. The iron smoke pipe passes up the centre, and a cylinder stove, with a door in the entry in the first story, for tending, has been placed in the ventilating shaft to heat the outgoing air. The cylinder stove is supported on iron bars placed across the shaft, and the funnel of the stove enters the main smoke pipe. From the lower room the foul air is taken down to the bottom of the ventilating shaft through a galvanized-iron duct, with a register in the floor in front of the teacher's platform, and equally distant from each inlet. This register is 34 by 24 inches, with a net area of 3.77 square feet. The foul air is taken down from the upper room to the bottom of the ventilating shaft through a galvanized-iron duct, with a register at the bottom of the northerly side of the room, and half way between the inlets, in rear of the teacher's platform. A part of this register extends below the floor of the platform, and has a duct running to the front of the platform and covered with wire netting. The clothing rooms are each provided with a warm-air register in the floor, and a foul-air outlet at the bottom of the inner side, connecting with the ventilating shaft. These are arranged to close if desired.

After the new heating and ventilation had been put in, an examination was made of these buildings, on a clear day, with a light southerly breeze, and the outside temperature 44°. In the easterly building in the lower room there were fifty-one seats, a membership of fifty-two, and with thirty-five pupils and two adults present. The doors and windows were closed, the cold-air mixing valve wide open, a moderate fire in the furnace and also in the stove in the ventilating shaft. The warm air was coming in at the westerly inlet at a temperature of 108°, and at the easterly inlet 86°. The velocity at the westerly inlet was 272.8 feet, and at the easterly inlet 180.2 feet per minute. The foul air was passing out at the outlet in the floor at a temperature of 78°, and a velocity of 381.75 feet per minute. The temperature at the breathing line was, on the easterly side, 73°; westerly side, 75°; and southerly side, 74°. A test for carbonic acid, made one hour and twenty minutes after the commencement of the forenoon session, near the centre of the room and near the breathing line, gave 6.9 parts in 10,000. There was coming into the room through both inlets 1,087.2 cubic feet of fresh air, or 21.31 for the seats, 20.9 for membership, and 29.38 for persons present. There was going out through the outlet 1,439.19 cubic feet per minute, or 28.21 for the seats, 27.67 for the membership, and 38.89 for persons present.

In the westerly building, an examination made on a clear day, with a gentle southerly breeze, the temperature 48°, gave the following results: In the upper room, with fifty-six seats, there was a membership of fifty-six, and fifty-four pupils and three adults present. The doors and windows were closed, a moderate fire in the furnace, and a good fire in the stove in the ventilating shaft. Cold-air mixing valve three-quarters open. The fresh air was coming in at the westerly inlet at a temperature of 86° and a velocity of 410 feet per minute; at the easterly inlet, at a temperature of 81° and a velocity of 355.8 feet. The foul air was going out at the outlet in the floor at a temperature of 72° and a velocity of 411.6 feet. The temperature at the breathing line was 70° on the three outer sides of the room. There was coming in through the two warm-air inlets 1,416.73 cubic feet per minute, or 25.29 for both seats and membership, or 24.85 for each person present. There was going out through the outlet (both above and under the platform) 1,513.7 cubic feet, or 27.03 cubic feet each for the seats and membership, or 26.55 for persons present. A test for carbonic acid, made at the breathing line and nearly in the centre of the room, gave 7.4 parts in 10,000. Test made one hour after the commencement of the afternoon session. Average age of pupils, eleven years.

In the lower room there were fifty-six seats, and a membership of thirty-six pupils. The doors and windows were closed, and the cold-air mixing valve three-quarters open. The warm fresh air was coming in through the westerly inlet at a velocity of 263.2 feet per minute, and a temperature of 86° ; and through the easterly inlet at a temperature of 83°, and a velocity of 226.1 feet. The foul air was going out at the outlet in the floor in front of the teacher's platform at a temperature of 69° and a velocity of 322.37 feet. The temperature at the breathing line was 70° on the easterly and westerly sides, and 71° on the southerly side. There was coming into the room through the two inlets 1,085.28 cubic feet, or 30.14 for the membership, or 19.38 cubic feet for the seats. There was going out through the outlet 1,215.33 cubic feet, or 33.75 for the membership, or 21.7 for each seat.

Hopkinton, District No. 1, Grade 1 (Primary) School-house. — This is a one-story wooden building, with one school-room in the easterly end and a clothing room and entry in the westerly end. The school-room is 31 feet 5 inches by 24 feet 4 inches by 11 feet 4 inches, with fifty-three seats. The membership was thirty-four. There are three windows each on the northerly and southerly sides, and one door in the westerly end. The heating was by one coal stove in the north-westerly corner. Window boards had been provided as a temporary means of supplying air. An examination of this room was made on a clear day, with a south-westerly breeze, outside temperature 42°. A good fire was burning in the stove. The temperature at the breathing line on the northerly and easterly sides was 63° and 65°. Five windows were open an average of 4.5 inches each, and the door closed. There were present thirty-one pupils, of an average age of six years and five months, and three adults. A test for carbonic acid was made at the breathing line, two hours after the commencement of the session, there having been no recess before the test was made. There were 33 parts in 10,000.

During the summer vacation means were provided for heating and ventilating. A No. 18 Puritan jacketed stove was placed in the north-westerly part of the room; under the stove is a galvanized-iron duct, 4 feet by 1 foot, leading to the northerly side of the building, and provided with a covering on the outside and with wire netting. A valve is provided to close this inlet, if desired, by the teacher. The area between the top of the stove and the jacket is 3.58 square feet. The top of the jacket is 7 feet above the floor. A brick ventilating shaft, 3 feet 1 inch by 2 feet, inside measure, has been built up through the clothing room, and provided with an iron door for tending a cylinder stove, placed above the outlet from the school-room, and which is 2 by 3 feet, covered with a wire grating. The net area is 5.25 square feet. The outlet is in the bottom of the partition, and its centre is five feet from the jacketed stove. The smoke pipe from the jacketed stove passes up the centre of the ventilating shaft.

An examination was made on a rainy day, air heavy, and a very light northerly breeze, with the outside temperature 55°. There was a moderate fire in the jacketed stove, and a brisk fire in the ventilating shaft. The doors and windows were closed, the fresh-air inlet wide open. The fresh air was coming into the room between the top of the stove and jacket at an average velocity of 160 feet per minute, and temperature 100°. The velocity at the outlet was 174 feet per minute, and temperature 88°. The temperature at the breathing line was 70° on the three outer sides of the room. There was coming in through the inlet 572.8 cubic feet of air per minute, or 10.8 for each seat, or 16.84 for the membership. There was going out through the outlet 913.5 cubic feet per minute, or 17.23 for each seat, or 26.86 for the membership. The difference between the amount coming in through the inlet and that going out through the outlet is made up by the air drawn in through the spaces about the doors, windows, floor, walls and ceiling. Another examination was made of this room, on a clear day, a light south-westerly breeze, the outside temperature 53°. There were present twenty-nine pupils and two adults. The membership was thirty-four. A light fire in the jacketed stove, and a good fire in the stove in the ventilating shaft. The inlet under the jacketed stove was wide open, and all the windows and the door closed. Fresh air was coming in at the inlet, between the top of the stove and the jacket, at an average velocity of 193 feet, and average temperature of 71°. The foul air was going out at the outlet at a velocity of 152 feet and a temperature of 67°. The temperature at the breathing line was, on the northerly and easterly sides, 63°, and southerly side, 62°.

There was coming in through the inlet 690.94 cubic feet of air per minute, or 13.03 for each seat, 20.32 for the membership, or 22.28 for each person present. There was going out at the outlet 798 cubic feet, or 15.05 for each seat, 23.47 for the membership, or 25.74 for each person present. The windows and door had been opened and the room aired out at recess. The windows and door were then closed, and fifty-five minutes after, a test for carbonic acid was made, near the centre of the room, at the breathing line, which gave 5.9 parts in 10,000.

District No. 1, Grades 2 and 3 School-house. — This is a two-story wooden building, with one school-room in each story in the easterly end. The entries and clothing rooms are in the westerly end. The lower room is 28 feet by 28 feet 3 inches by 9 feet 3 inches, and had seventy-one seats, and a membership of thirty-two. The upper room is 28 feet by 28 feet 3 inches by 12 feet 1 inch, with sixty-four seats, and a membership of forty-one. Three windows on the northerly and three on the southerly side. The lower room has one door, and the upper three doors, on the westerly side. Each room had three five-inch window boards, and a wooden ventliating flue with a top and bottom round register, having a net opening of .93 square feet. The one in the lower room was in the south-westerly corner, and the one in the upper room in the north-westerly corner. Over the door in the lower room was an opening having a net area of .56 square feet, and leading into the entry. Each room was warmed by one coal stove, located in the north-westerly part. The upper room had in addition one wood stove, located near the center of the easterly part.

An examination was made on a clear day, with a light south-westerly breeze, and the outside temperature 42°. In the lower room were seventy-one seats; twenty-eight pupils (of an average age of seven years) and two adults present. The membership was thirty-two. There was a good fire in the stove, and the temperature at the breathing line was 58°, 59° and 60° on the three outer sides. Three windows were open five inches, with window boards in. The top ventilating register was open, and air was going out at a velocity of 120 feet per minute, also at the opening over the door at a velocity of 130 feet. The room had been aired out at recess, and a test for carbonic acid, made near the centre of the room at the breathing line, one hour and five minutes after, gave 20 parts in 10,000. Another test, made forty minutes after the commencement of the afternoon session, and under similar conditions as before, except that the window boards had been taken out and the windows closed, gave 25 parts in 10,000.

An examination was made of the upper room, which had sixty-four seats, a membership of forty-one, with thirty-eight pupils (average age between eight and nine years) and two adults present. The room had been aired out at recess, the window boards in, and the ventilators open. Half an hour after recess, a test for carbonic acid gave 16 parts in 10,000, at the breathing line, near the centre of the room. The window boards were taken out and the windows closed; and fifteen minutes after, a test made at the same place showed 29 parts in 10,000 parts of air.

During the summer vacation heating and ventilation was provided in this building, the work being done by the Barstow Stove Company of Boston. A No. 18 Puritan jacketed stove was placed in each school-room, located, and provided with an inlet the same as before described in Grade 1 school-house: A galvanized-iron ventilating shaft was constructed in the entries. It is 41 by 35.5 inches, inside measure. The lower part is enlarged to 60 by 35.5 inches, to allow room for a cylinder stove, which is placed above the entrance of the foul-air openings, at the bottom of the sides. There is a door through which the stove can be tended. A cast-iron pipe passes up the center of the shaft, and is used for a smoke stack for both the jacketed and cylinder stoves. The top of the shaft is covered with a galvanized-iron hood, through which the smoke stack passes. The hood is far enough above the top of the shaft to give an area between, of the full size of the ventilating shaft. The foul air from the lower room is taken into the bottom side of the ventilating shaft, on the northerly side, passing from the school-room by an outlet in the bottom of the westerly side of the room. This outlet is 2 by 3 feet, covered with a wire grating, and has a net area of 5.25 square feet. The foul air is taken from the upper room through an outlet which has a net area of 5.25 square feet, at the center of the bottom of the westerly side, and passes down and enters the bottom of the easterly side of the ventilating shaft, through a galvanized-iron duct, 31 by 23.5 inches, inside measurement.

An examination was made on a rainy day, the air heavy, and a hardly perceptible northerly breeze, with the outside temperature 55°. In the lower room there were sixty-eight seats, a membership of thirty-six, and thirty-five pupils and two adults present. There was a moderate fire in the jacketed stove, and a good fire in the stove in the ventilating shaft; the doors and windows closed, and the inlet to the jacketed stove open. The temperature at the breathing line was 70° on the three outer sides of the room. Fresh air was coming in between the top of the stove and the jacket, at a temperature of 95°, and an average velocity of 101.66 feet per minute. Foul air was going out at the outlet at a temperature of 75°, and a velocity of 123.3 feet. There was coming in at the inlet 363.94 cubic feet, or 5.33 for each seat, 10.1 for the membership, or 9.83 for each person present. There was going out at the outlet 647.32 cubic feet, or 9.51 for each seat, 17.98 for the membership, or 17.49 for each person present. A test for carbonic acid, made near the center of the room at the breathing line, one hour and fifteen minutes after the beginning of the session, gave 10 parts in 10,000.

In the upper room an examination was made under similar conditions as in the lower room, but with sixty-one seats, a membership of forty-one, and forty pupils and two adults present. The fresh air was coming in at the inlet at a temperature of 78°, and a velocity of 128.3 feet. The foul air was going out at a temperature of 70°, and a velocity of 165 feet. The temperature at the breathing line was 67°. There was coming in through the inlet 459.81 cubic feet of fresh air per minute, or 7.52 for each seat, or 11.2 for the membership. There was going out at the foul-air outlet 866.25 cubic feet, or 14.2 for each seat, or 21.12 for the membership.

Another examination of this building was made on a clear day, with a light north-westerly breeze, and the temperature 53°. In the lower room, the membership was then thirty-nine, with thirty-nine pupils and two adults present. The windows and door were closed, the inlet open ; a good fire in the jacketed stove and also in the stove in the ventilating shaft. The temperature was 72° on the northerly and southerly sides, and 71° on the easterly. Fresh air was coming in between the top of the stove and the jacket, at a temperature of 83°, and an average velocity of 185 feet per minute. Foul air was going out at the outlet at a temperature of 75°, and a velocity of 122 feet. There was coming in through the inlet 662.3 cubic feet of air per minute, or 9.74 for each seat, 16.98 for the membership, or 16.15 for each person present. There was going out through the outlet 640.5 cubic feet, or 9.41 for each seat, 16.42 for the membership, or 15.62 for each person present. The room had been thoroughly aired out at the noon intermission ; and a test for carbonic acid at the center of the room near the breathing line, made fifty minutes after the beginning of the afternoon session, gave 8 parts in 10,000.

In the upper room an examination was made, under similar conditions as in the room below ; but with the old ventilating register open, and cold air coming in at a velocity of 139 feet per minute. There were present thirty-nine pupils and two adults. The temperature was 68° on the northerly side, 66° on the easterly side, and 65° on the southerly side, at the breathing line. The fresh air was coming in at the inlet at a temperature of 78°, and an average velocity of 155 feet per minute. The foul air was going out at the outlet at a temperature of 69°, and a velocity of 178 feet. There was coming in through both inlets 693.9 cubic feet of air per minute, or 11.37 for each seat, or 16.92 for both membership and persons present. There was going out through the outlet 934.5 cubic feet, or 12.32 for each seat, or 22.79 for both membership and persons present. The room had been thoroughly aired out at the noon intermission; and a test for carbonic acid, made near the centre of the room at the breathing line, gave 6.4 parts in 10,000 one hour after the beginning of the session.

Millis, Adams School-house. — This is a two-story wooden building, with one school-room and one anteroom in each story, the school-rooms and anterooms being separated by entry and stairs. The school-rooms are in the northerly end of the building.

The lower primary grade school-room is 31 feet 3 inches by 30 feet by 10 feet, and contained forty-two seats. The membership was thirty-seven. The only ventilation was by two doors on the southerly side, and three windows each on the easterly and westerly sides. The heating was by two coal stoves, one in the north-westerly and one in the south-easterly part of the room. An examination was made on a clear day, with a northerly wind, and the outside temperature 32°. There were present fifteen pupils and two adults. The doors and windows were closed, and a good fire in each stove. The temperature at the breathing line was at the northerly end 67°, and southerly end 74°. A test for carbonic acid, made at 1.38 P.M., gave 14 parts, and another test at 2 P.M. gave 16 parts, in 10,000.

The upper room is 31 feet 3 inches by 34 feet by 12 feet 5 inches, with forty seats, and a membership of thirty pupils (grammar grade). The ventilation was by the doors and windows, and four round twelve-inch ventilating registers in the ceiling, near the corners, a deduction of one-half to be made for the register faces. These registers lead to the attic. In the northerly end of the attic was a round opening, of two feet diameter, obstructed by louvers. There was also an opening, 16 by 20 inches, leading to the belfry. The heating was by two coal stoves, similarly located as in the room below. An examination was made directly after the one in the room below. There were twenty-two pupils and two adults present. There was a moderate fire in each stove. The temperature at the breathing line at the centre of the northerly end was 65°, and southerly end 69°. The north-westerly ventilator in the ceiling was two-thirds open, and the velocity out was 60 feet per minute; the north-easterly one open, and the velocity out was 110 feet; the south-easterly one closed; the south-westerly one open, and the velocity out was 125 feet. The doors and windows were closed. A test for carbonic acid, made at 2.22 P.M., gave 11 parts, and another test at 2.52 P.M. gave 12 parts, in 10,000.

Changes were made in the ventilation of this building by putting in the Lummus system, — a ventilating fire-place and heated outlet flue. This was located in the center of the northerly end of the building, with one fire-place, one inlet and one outlet for each room. The space occupied is 1 foot 5 inches by 9 feet 3 inches, and extends to the top of the room. The fresh air passes in from a duct on the outside of the northerly end of the building to the rear of the fire-place, which is of corrugated iron; it is there warmed, and passes up and into the school-room through a register 29 by 29 inches, with valves to close if desired. The net area is 3.89 square feet. The inlet is directly over the fire-place, and the bottom is four feet from the floor. The outlet in the lower room is at the bottom of the shaft and on the westerly end, and is 17 by 29 inches, with a register provided with valves to close, and has a net area of 2.28 square feet. In the upper room the outlet is the same, except that it is on the easterly end of the shaft. The fresh air for the upper room is conducted up from near the ground in a duct on the outside of the building, and enters in the rear of the fire-place in the second story. Both the lower and upper rooms receive the air from a duct about one foot wide and five feet high, which is built across the lower part of the northerly end of the building, with an opening at each end of the duct. This duct is intended for a wind break, there being no valves in the inlets except those in the register faces in the school-rooms; and also to shut off the effluvia from the sanitaries, which are very badly situated as regards the inlet, being about fifteen feet directly north of the building. The fire-places are in the front of the shaft, and are 29 by 36 inches. There is an open grate for burning coal in each, provided with a screen or blower, closing the opening except a space 5 inches high and the width of the fire-place, for admitting air under the grate. The heat from the fire-place is utilized to heat the incoming air, and also to heat the foul-air ducts. The shaft is brick, topped out with galvanized iron, and provided with a galvanized-iron cap, to keep out the rain. The two coal stoves were retained for heating, and are both connected with one pipe leading into the smoke flue of the ventilating shaft.

An examination was made of this building on a clear day, with a light north-westerly breeze, and the outside temperature 44°. In the lower room there were twenty-seven double seats, a membership of thirty-five pupils (primary grade), and twenty-nine pupils and two adults present. The doors and windows were closed, a light fire in the stove in the south-easterly part of the room, and a brisk fire in the grate in the fire-place, with the blower or screen in place. The temperature thirty inches above the floor was at the center of the easterly side 65°, and at similar points on the southerly and westerly sides 68° and 66°. The temperature at the center of the westerly side was at the ceiling 71°; three feet below, 70°; six feet below, 68°, and thirty inches above the floor, 66°. The fresh air was coming in at the inlet over the fire-place — the valves being wide open — at a temperature of 64°, and an average velocity of 68.8 feet per minute. The inflow was very irregular, and came in gusts as the wind blew. The long, silky down or coma of the milkweed seed was used to indicate the direction of the incoming air; and, when released at the top of the inlet, it would go about ten feet into the room, with a slight upward motion, and then gradually fall down, and towards the fire-place. When released at the bottom of the inlet, it would go about four feet, and be gradually drawn down, and towards the opening under the blower or screen. The foul air was going out at the outlet — the valves being wide open — at a temperature of 68°, and a velocity of 306.2 feet per minute; also under the blower in the fire-place at a velocity of 98.33 feet. There was coming into the room through the inlet 267.63 cubic feet per minute, or 7.64 cubic feet for the membership, or 8.63 for each person present. There was going out through the outlet and under the blower 821.04 cubic feet, or 23.45 for the membership, or 26.48 for each person present. The difference between the amount coming in at the inlet and that going out at the outlets is made up by the amount coming in about the windows and doors, which are not tight-fitting, and also the amount coming in through the ceiling, walls and crevices in various parts of the room. A test for carbonic acid, made one hour and twenty-five minutes after the beginning of the afternoon session, and before recess, gave 5.7 parts in 10,000.

An examination of the upper room, made directly after that of the lower room, gave the following results: There were twenty double seats, the membership was thirty-six, and there were twenty-eight pupils and two adults present, and for about half an hour two more adults. The doors and windows were closed, and the valves in the inlet and outlet wide open. The blower was in position over the fire-place opening. There was a light fire in the south-easterly stove, and a good fire in the grate in the fire-place. The temperature at the center of the three outer sides, thirty inches above the floor, was 70°; and six feet above the floor, on the westerly side, 72°. Fresh air was coming in at the inlet over the fire-place at a temperature of 76°, and an average velocity of 67 feet per minute. The inflow was very irregular, as in the room below. Foul air was going out at the outlet at a temperature of 71°, and a velocity of 240.6 feet; and under the blower at a velocity of 110 feet. There was coming into the room through the inlet 260.63 cubic feet per minute, or 7.24 for the membership. There was going out through the outlet, and under the blower or screen, 686.06 cubic feet per minute, or 19.05 each for the membership. A test for carbonic acid, made one hour and fifteen minutes after recess, and near the breathing line at the center of the room, gave 8.7 parts in 10,000.

Southborough, *Centre School-house.* — This is a one-story wooden building, with one school-room in the westerly part, and two entries or clothing rooms and one fuel room in the easterly part. The school-room is 30 feet 8 inches by 25 feet 1 inch by 11 feet 6 inches, and had forty-four seats and a membership of forty-two pupils. There were three windows on the northerly and three on the southerly side, with two doors on the easterly side, connecting with the clothing rooms, one of which was used as a recitation room. The school-room was heated by one wood-burning stove, near the center of the easterly part of the room, in front of the teacher's desk. Ventilation was had by the doors and windows, and two 6-inch round ventilators at the top and bottom, entering each a separate flue, each side of the smoke stack on the westerly side of the room. An examination was made on a cloudy day, light breeze, and temperature 46°. There were present forty pupils (small children) and three adults. There was a moderate fire in the stove; the doors and windows were closed, except two windows which were open four inches at the top; the top ventilators each open. The temperature at the breathing line was 69° on the northerly side, and 66° on the westerly side. A test for carbonic acid, made at the breathing line near the center of the room, one hour and twenty minutes after the beginning of the session, and before recess, gave 33 parts in 10,000. The room was thoroughly aired out for half an hour, and then closed, except that five windows were opened five inches at the top, there being then twenty-three pupils and three adults present. At the expiration of half an hour, the temperature then being 61° and 62°, a test for carbonic acid was made in the same place as the former test, and gave 14 parts in 10,000.

Changes were made in the heating and ventilation, by placing in the north-westerly corner of the room a portable Magee furnace, with a jacket 4 feet 10 inches high, the air being brought in under the floor in a metallic duct, 12 by 40 inches, the outer end of which is protected by wire netting, having a net area of three square feet. A valve is provided for the teacher to close, if desired. A brick ventilating shaft has been built at the center of the westerly side of the room, provided with a stove, placed above the outlet from the room, which is at the bottom of the front of the shaft, and 18 by 40 inches, without any grating. The smoke pipe from the furnace also passes up the center of this shaft. The furnace is but 3 feet 7 inches from the ventilating shaft. An examination was made on a rainy day, with a moderate northerly breeze, and temperature 34°. There was a good fire in the furnace, and a light fire in the shaft stove. The temperature at the breathing line was 69° on the northerly side, and 70° on the southerly and westerly sides. There were thirty-seven seats, membership thirty-nine, and thirty pupils and four adults present. The doors and windows were closed. Fresh air was coming in at the inlet at a temperature of 118°, and a velocity of 290 feet per minute. Foul air was going out at a temperature of 70°, and a velocity of 250 feet. There was coming in through the inlet 870 cubic feet, or 23.51 for each seat, or 22.3 for the membership, or 25.58 for each person present. There was going out through the outlet 1,250 cubic feet per minute, or 33.78 for each seat, or 32.05 for the membership, or 36.76 for each person present. A test for carbonic acid, made one hour and thirty minutes after the commencement of the session, and in the centre of the room at the breathing line, gave 7.1 parts in 10,000. The fire in the stove in the ventilating shaft was increased till the stove was dark red, and the velocity at the outlet became 351 feet per minute. The location of the inlet is very bad, being within a few feet of the sanitaries, which are on the westerly end of the building. These should have been removed, the earth excavated and filled in with fresh earth.

Milford, Park Grammar School-house. — This is a two-story, four-room wooden building, two school-rooms in each story, separated by clothing room and stairway, and with a front projecting stairway and hallway. Room No. 1, second story, easterly side, is 36 feet 11 inches by 27 feet 2 inches by 12 feet 3 inches high. It had fifty-six seats, a membership of thirty-nine pupils, and thirty-three pupils and four adults present. Was heated by a coal stove, and ventilated by a "Robinson" ventilator in the ceiling over the teacher's desk. This ventilator is divided into four parts, 10 by 10 inches each. The anemometer showed no motion when placed in each division. The weather was clear, a strong wind blowing and outside temperature 22°. There was a good fire in the stove; one window down four inches at the top, and the opposite one up four inches at the bottom. The temperature of the room was 70°. A test for carbonic acid, made at 3.15 P.M., gave 20 parts in 10,000.

Room No. 2, second story, westerly side, is of the same dimensions as Room No. 1, and was ventilated and heated in the same manner. There were sixty seats, a membership of fifty, and forty-two pupils and four adults present. A good fire was burning in the coal stove, and the Robinson ventilator was wide open.

The temperature at the breathing line of the scholars was 62°, 68° and 69° on the three outer sides of the room. The windows had been opened at recess, but three were then left down at the top two inches and up at the bottom one inch. A test for carbonic acid, made at 3.40 P.M., at the center of the room at the breathing line, gave 29 parts in 10,000.

Room No. 3, first story, easterly side, same size as No. 1, had sixty seats, a membership of fifty-one, and forty-six pupils and three adults present. It was heated by one coal stove, and ventilated by a Robinson ventilator, 2 by 2 feet, divided into four parts, and with a deduction of one-third the area for the face covering. This was located near the top of the room, and in the north-westerly corner. The ventilator valve being wide open, the anemometer showed the draft per minute in each division was 175 feet in, 240 feet in, 10 feet out, and 20 feet in. There was a good fire in the stove; the doors and windows were closed. The temperature on the inner side was 68°. A test for carbonic acid, made at 2.45 P.M., gave 20 parts in 10,000.

Room No. 4, first story, westerly side, same size as the other three rooms, had sixty-eight seats, a membership of sixty-one, and fifty-four pupils and four adults present. It was heated by one coal stove, and ventilated by a Robinson ventilator, of the same size and similar location as in Room No. 3. The ventilator valve being wide open, the anemometer showed in each division the movement of air per minute was 20 feet out, 30 feet in, 210 feet in, and 300 feet in. Another trial, made five minutes after, showed no velocity in three of the divisions, and 218 feet in through the other. The stove door was open an area of 76 square inches, and showed an out draft of 90 feet per minute velocity.

The temperature of the room on the inner side was 64°. The doors and windows were closed. A test for carbonic acid, made at 2.20 P.M., fifty minutes after the commencement of the session, gave 25 parts in 10,000.

In each room there are two windows in each of the three outer sides, and two doors in the inner side. During the past summer a change was made in the means of heating and ventilating this building. The Smead system (without the sanitary closets) was put in and the Robinson ventilators closed up. Each room is provided with one inlet, seven feet above the floor, on the inner side of the room, with a net area of 4.19 square feet each for the two lower rooms, and 3.44 square feet each for the two upper rooms. Each room has two outlets in the floor, one on each side of the break in the inner partition, through which the warm-air ducts pass. The net area of the outlets is 2.96 square feet each for the lower rooms, and 3.98 for the upper rooms. The outlets from each upper room are enlarged when they reach the floor of the lower room, and are there made of a sufficient size to conduct the air from both the upper and lower room, through one duct, to the foul-air gathering chamber, and from there to the base of the heated ventilating shaft. The ducts for the warm and the foul air are of galvanized iron. The foul-air chamber and ducts connecting with the ventilating stack, and the stack, are of brick. An examination of Room No. 2 was made on a rainy day, the air heavy, with a light easterly breeze, the outside temperature 48°. There were sixty seats, membership forty-four, forty-three pupils and 5 adults present. There was a moderate fire in the furnaces, and a good fire in the heater in the ventilating stack. Doors and windows were closed during the session, the warm-air valve wide open. The temperature at the breathing line of the seated pupils was on the northerly and southerly sides 70°, and on the westerly side 71°. The warm air was coming in at the inlet at a temperature of 88°, and a velocity of 258 feet per minute. The foul air was going out at the northerly outlet at a temperature of 72°, and a velocity of 213 feet per minute; at the southerly outlet, 72°, and a velocity of 214.5 feet. There was coming into the room through the fresh-air inlet 887.52 cubic feet per minute, or 14.79 for each seat, 20.17 for the membership, or 18.49 for each person present. The foul air was going out at the two outlets, 1,717.37 cubic feet per minute, or 28.62 for each seat, 39.03 for the membership, 35.77 for each person present. A test made for carbonic acid, at 4 P.M., just before the close of the session, there having been no recess during the session, gave at the breathing line in the centre of the room 7.4 parts, and near the south-westerly corner 6.6

parts, in 10,000. An examination made of Room No. 3, under similar conditions as in Room No. 2, but with fifty-eight seats, membership forty-six and forty-one pupils and five adults present, gave the following results: The fresh air was coming in at the inlet at a temperature of 80°, and a velocity of 264.4 feet per minute. The foul air was going out at the northerly outlet at a temperature of 67°, and a velocity of 256.8 feet; at the southerly outlet, at a temperature of 69°, and a velocity of 235.2 feet. The temperature at the breathing line was, on the northerly and easterly sides, 66°, and on the southerly side, 67°. There was coming in at the inlet 1,107.83 cubic feet of fresh air per minute, or 19.1 for each seat, or, 24.08 for both the membership and each person present. Foul air was going out at both outlets, 1,356.32 cubic feet per minute, or 23.38 for each seat, or 29.48 for both the membership and each person present. A test for carbonic acid, made at the breathing line in the centre of the room, at 3.10 P.M., one hour and forty minutes after the commencement of the session, gave 9.5 parts in 10,000.

South Grammar School-house. — This is a two-story, four-room brick building, with two school-rooms and a clothing room between them in each story. There is a projection on the front for hallway and main stairs, an additional stairway being at the rear of the clothing rooms. Each school-room has two windows on each of the three outer sides, and one door on the inner side, connecting with the clothing room. The rooms are each 37 feet by 27 feet 4 inches, those in the lower story being 12 feet 2 inches high, and in the upper story 12 feet 9 inches high. The building was ventilated by the windows and doors, and Robinson ventilator. The lower rooms had each, in one corner, a wooden duct leading to the main ventilator. In each duct at top and bottom of the room was a round 10.5-inch register (an allowance of one-half to be deducted for the register face). The upper rooms were similarly provided, and had in addition a 2 by 2 feet ventilator in the top of the room, over the teacher's desk. Window-board ventilators had been provided at the top of two windows in each room. Each room was heated by a coal stove, situated near the door and on the inner side. The draft at the Robinson ventilators was not sufficient to turn the anemometer wheel.

An examination, made on a clear day, with a strong breeze, and the outside temperature 18°, gave the following results: Room No. 1, second story, south-westerly side, fifty seats, membership thirty-three, thirty pupils and three adults present. A good fire in the stove, the ventilators open, also two windows down each five inches at the top. The room had been thoroughly aired out at recess. The temperature on the inner side at the breathing line was 66°. A test for carbonic acid, made just before the noon adjournment, gave 16 parts in 10,000. Room No. 2, second story, north-easterly side, twenty-five double desks with fifty seats, membership thirty-seven, and thirty-six pupils and four adults present. A good fire in the stove. Temperature at inner side 65°. The ventilators open at the top of the room, and closed at the bottom, showed no velocity either in or out, when tried with the anemometer. One window was down two inches at the top, and the door closed. The room had been thoroughly aired out at recess, at 10.30 A.M. A test for carbonic acid, made at 11.50 A.M., gave 25 parts in 10,000. Room No. 3, first story, south-westerly side, fifty seats, membership forty-four, forty-three pupils and four adults present. A good fire in the stove. The temperature at the three outer sides was 62°, and at the inner side 63°. The Robinson ventilators shut, and could not be opened; the windows and doors closed. The room had been thoroughly aired out three-quarters of an hour before a test for carbonic acid was made, and which gave 25 parts in 10,000. Room No. 4, first story, north-easterly side, seventy-two seats, membership thirty-nine, thirty-seven pupils and four adults present. A good fire in the stove. Temperature at inner side, 66°. Ventilator open at top of room, and one window down two inches at the top. The room had been thoroughly aired out at recess, and the carbonic acid test, made one hour after recess, gave 20 parts in 10,000. Average age of pupils was ten years and six months.

During the past season this building was provided with new means of heating and ventilating, the work being done by the Barstow Furnace Company of Boston. The heating is by two 30-inch fire-pot Barstow furnaces in the cellar, both enclosed in the same brick work, and drawing the supply of air through a brick duct from a cold-air room in the easterly part of the cellar. The heated air is conveyed up to the school-rooms through galvanized-iron ducts, provided with mixing valves. The foul air is taken out by galvanized-iron ducts, one from each room, leading to the bottom of the brick ventilating shaft, which is 4.5 feet square, inside measure. At the bottom of this shaft are brick partitions about three feet high, to prevent the air that comes down one duct affecting that brought down by the others. A cylinder stove is placed above these partitions. The smoke pipe from the stove enters a twelve-inch round cast-iron smoke flue from the furnaces, the heat from which is also utilized to heat the outgoing air. This shaft passes up about midway of the inner wall, and through the two south-westerly rooms. The warm air enters the rooms on the inner side, seven feet above the floor, and is taken out on the same side of the room. In the two south-westerly rooms each outlet is in the floor, and in the north-easterly rooms at the bottom of the inner side, the south-westerly rooms having cast-iron registers, and the other rooms wire gratings to protect the outlets. The inlets into each room have a net area of 4.5 square feet, and the outlets from rooms 1 and 4 a net area of 5.25, and from rooms 2 and 3, 5.34 square feet. The lower clothing room has a register 14 by 21 inches in the floor. There is also in both the lower and upper clothing rooms a wall-register outlet, 11 by 14 inches, leading directly into the ventilating shaft; these are provided with metallic deflectors, to give an upward draft.

An examination, made on a clear day, very light breeze, the outside temperature 50°, gave the following: Room No 1, forty-eight pupils and three adults present Doors and windows closed; a strong fire in the furnaces, the cold-air valve wide open, and a good fire in the stove in the ventilating shaft. The temperature at the breathing line was, on the easterly and westerly sides, 73°, and on the southerly side 74°. Warm air was coming in the inlet at a temperature of 90°, and a velocity of 140 feet. Foul air was going out at outlet at a temperature of 76°, and a velocity of 178 feet per minute. There was coming into the room through the inlet 630 cubic feet per minute, or 12.35 for each person present. There was going out through the outlet 950.52 cubic feet, or 18.63 for each person present. A test for carbonic acid made at 3.50 P.M., two hours and twenty minutes after the commencement of the afternoon session, there having been no recess, gave 8.7 parts in 10,000.

Room No. 3, with similar conditions as in No. 1, but thirty-four pupils and three adults present. Temperature on easterly and westerly sides, 68°, and southerly side, 69°. Temperature at inlet, 98°, and a velocity of 133.4 feet per minute. Temperature at outlet, 72°, and a velocity of 185 feet per minute. Coming in at inlet, 600.3 cubic feet of air per minute, or 16.22 for each person present. Going out at outlet, 987.9 cubic feet of air per minute, or 26.7 for each person present. A test for carbonic acid, made one hour and fifteen minutes after commencement of the session, gave 6.9 parts in 10,000. Another examination was made of Room No. 3 on a rainy day, with a light south-westerly breeze, and the outside temperature 49°. There was a strong fire in the furnaces, and in the heater in the ventilating stack. The hot-air valve was opened wide, and air came in at a temperature of 135°, and a velocity of 308.6 feet. At the outlet the temperature was 76°, and velocity 327 feet. Before the opening of the hot-air valve, the temperature of the room at the breathing line was 65° on the northerly side, and 66° on the easterly side, soon rising to 81°. At this time the temperature on the (inner) northerly side of the room, at two feet below the ceiling, was 88°; four feet below, 85°; six feet below, 85°; eight feet below, 82°; ten feet below, 81°. On the (outer) southerly side it was, at the ceiling, 84°; two feet below, 84°; four feet below, 82; six feet below, 81°; eight feet below, 80°; ten feet below, 79°. There was coming into the room through the inlet 1,388.7 cubic feet of air per minute, or 34.71 for the membership of forty. There was going out at the outlet 1,746.18 cubic feet per minute, or 43.65 for the membership.

Marlborough, Bigelow School-house. — This is a three-story wooden building, with nine school and two recitation rooms, with centre stairways and hallways in the middle of the building. The heating was by wood-burning stoves in all except one room, which was heated by a coal stove. The ventilation was by means of the doors and windows, and two small wooden ducts in each room, with openings near the top, and having a net average area of 120 square inches. The school-rooms average 35 feet 3 inches by 25 feet 2 inches by 11 feet 2 inches, and contained from fifty-eight to sixty-seven seats. One recitation room had thirteen and one thirty-one seats. The school-rooms had from seven to nine windows each. The sanitary closets were on the southerly side, and joined to the school-house.

An examination was made on a misty day, a very light breeze, and the outside temperature 52°. The rooms had been aired out, and the windows being closed an average of twenty-two minutes, the tests for carbonic acid gave from 20 to 29 parts in 10,000. In one room, with thirty-seven pupils and two adults present, and the windows closed twenty-two minutes, the temperature rose from 67° to 78°. The carbonic acid test in this room gave 20 parts in 10,000. A test with the anemometer at the outlets in most of the rooms showed no movement of air. The greatest velocity was in one room where seven windows were down an average of six inches at the top. It was at one ventilator 130 feet per minute.

During the summer vacation extensive alterations were made. The Smead system of heating, ventilating and sanitary closets was put in. Three brick ventilating shafts were built, one at the end of each wing of the building. Separate sanitary closets for each sex were constructed in the basement. Cold-air rooms were put in. Each wing was provided with furnaces, and an additional one provided for heating the entry and hallways, with floor registers. The clothing and recitation rooms were heated and ventilated. Each school-room has one galvanized-iron inlet duct for warm air on the inner side, and about seven feet above the floor; except in one room in the third story, southerly wing, which, on account of the location, is heated by an inlet register in the floor. Each school-room has two galvanized-iron outlet ducts at the floor in each corner of the inner side of the room.

Since the improvements were made, tests have been taken in the various rooms. The examination of one room in each wing, made on different days, is here given as a fair average. In the north-easterly room, first story, on a clear day, light north-easterly breeze, outside temperature 59°. Fifty-seven seats, membership forty-eight, forty-five pupils and three adults present. Moderate wood fire in the furnace and ventilating shaft heater. Windows and doors closed, and cold-air valve wide open. Temperature at breathing line 69° on northerly, and 67° on easterly and southerly sides. Temperature at inlet 70°. Velocity at inlet 260 feet per minute. Temperature at each outlet 68°. Average velocity at both outlets 249.66 feet per minute. There was coming into the room through the inlet 847.6 cubic feet of air per minute, or 14.87 for each seat, or 17.65 both for membership and persons present. No test for carbonic acid made at this time. There was going out at both outlets 1,198.36 cubic feet of air, or 21.02 for each seat, or 24.96 for both membership and each person present.

In the north-westerly room, third story, the examination was made on a cloudy day, strong westerly breeze, outside temperature 45°. Fifty-six seats, membership thirty-five, thirty pupils and two adults present. Moderate fire in furnace and in heater in ventilating stack. In this room the outlet in the north-easterly corner also takes out foul air from the recitation room. Doors and windows closed. Temperature at breathing lines 62° on northerly and westerly sides, and 64° on southerly side. Temperature at inlet 84°. Average velocity at inlet 379.33 feet per minute. Temperature at outlet in the north-easterly corner 65°, and in south-easterly corner 64°. Velocity at north-easterly corner 79 feet, and at south-easterly corner 144.6 per minute. A test for carbonic acid, made at the breathing line in the centre of the room, one hour after the commencement of the afternoon session, gave 6.9 parts in 10,000. There was coming in at the inlet 1,050.74 cubic feet of air per minute, or 18.76 for each seat, 30.02 for the membership, or 32.83 for each person present. There was going out at both outlets 782.6 cubic feet, or 13.97 for each seat, 22.36 for membership, or 24.45 for each person present.

An examination of the southerly room in the first story was made on a rainy day, a north-westerly breeze, the outside temperature 35°. There were sixty-six seats, membership sixty-three, and fifty-seven pupils and three adults present. A moderate fire in the furnace and a good fire in the heater in the ventilating shaft. Doors and windows closed. Temperature at the breathing line 67° on the easterly side, and 68° on the southerly and westerly sides. Temperature at the inlet 90°. Average velocity at inlet 344.6 feet per minute. Temperature at outlet in south-westerly corner, 71°, and at outlet in north-easterly corner 70°. Velocity at north-westerly outlet 263 feet, and at north-easterly 283 feet per minute. There was coming in at the inlet 1,195.76 cubic feet per minute, or 18.11 for each seat, 18.98 for membership, or 19.92 for each person present. There was going out at both outlets 1,310.4 cubic feet per minute, or 19.85 for each seat, 20.8 for membership, or 21.84 for each person present. A test for carbonic acid, made at the breathing line in the centre of the room, forty-five minutes after recess, gave 8.3 parts in 10,000. The average velocity at the sanitary closets was 750 feet out per minute. The largest amount coming in at any inlet per pupil for membership was 30.2 cubic feet per minute, and the smallest 17.01. The largest amount going out of any room per pupil for membership was 38.34 per minute, and the smallest was 12.77.

Natick, Centre School-house. — This is a three-story, twelve-room, wooden building, with a corridor running north and south through the centre, and with tower stairways at each end. The rooms in the first and second stories average 30 feet 6 inches by 24 feet by 11 feet. In the third story the north-easterly and south-easterly rooms are 30 feet 6 inches by 24 feet by twelve feet, and Room No. 12 in the south-westerly part is 33 feet 8 inches by 30 feet 6 inches by 12 feet. Room No. 11, a recitation room connected with Room No. 12 by two doors, is 36 feet 6 inches by 14 feet 6 inches by 12 feet, and is in the north-westerly corner. There were twenty-eight seats in No 11, and in No. 12 was a membership of eighty-two pupils, of the highest grammar grade. The other rooms contained from forty-seven to sixty-six seats each, with an average of 54.75 for each room in the building. Each room was heated by a coal stove in a corner nearest the corridor. The ventilation was by the windows, doors and a small wooden duct in the corner. These ducts had openings at the top and bottom, areas of from 74 to 96 square inches. These ducts entered two large ones, 35 inches by 13 inches, in the attic each side of the centre of the building; these again entered another one 35 inches by 35 inches on each side of the centre of the building. These last were connected with two Emerson ventilators on the top of the building. Rooms 9, 10 and 12 also had round 24-inch ventilators in the ceiling, which connected with the attic.

An examination was made on a clear day, a strong north-westerly wind, and the outside temperature 20°. Good fires in the stoves, and most of the windows open an average of two inches at the top. The temperature ranged from 60° to 70° in the different rooms. Tests for carbonic acid ranged from 12 parts in one room which had three windows down at the top an average of 2.5 inches, and which had been aired out about fifteen minutes before the test was made, to 33 parts in 10,000, the greater number averaging 22. The ventilators were open in all the rooms. In Room No. 12 it was 18 parts; the windows being closed twenty minutes, it rose to 40 parts in 10,000. There were eighty pupils and three adults present in this room.

During the summer vacation the Smead system of heating and ventilating (without the sanitary closets) was put into the building. A large brick shaft was built across the centre of the corridor, and provided with a heater above the entrance of the foul-air ducts at the bottom. There are two metallic foul-air ducts leading from the two corners of each room and nearest the corridor, except Room No. 11, which has one, and Room No. 12, which has three. These ducts are enlarged at each story as they go down. Four furnaces are provided for heating the fresh air, which is conveyed to the rooms in galvanized-iron ducts, and enters on the inner side eight feet from the floor. An examination was made on a clear day, with a moderate south-westerly wind. There were good fires in the furnaces, and also in the heater in the ventilating shaft. Doors and windows closed. The tests for carbonic acid, made at the breathing line and near the centre of the rooms, during the latter part of the afternoon session, there having been only five minutes' recess during the session, showed from 7.1 to 9.5 parts in 10,000, except in Room 12, which had sixty-four pupils and three adults present, and with the doors connecting with No. 11 open. In this room the test was made at 11.45 A.M., and gave 15 parts in 10,000. The lowest temperature in any part of any room in the building, taken two feet above the floor, was 64°, and the highest was 72°. The results of examinations in one room, which is a medium between the best and poorest results in the building, are as follows: An examination was made before the changes, on a clear day, strong north-westerly wind, outside temperature 20°. Fifty-one seats, membership fifty-one, fifty pupils and three adults present. A good fire in the stove in the north-westerly part of the room. Temperature on the westerly side, two feet above the floor, 70°. Ventilators open at top and bottom, and three windows down at the top an average of 2.5 inches, doors closed. The windows were closed twenty-five minutes; and a test for carbonic acid, made at the breathing line in the centre of the room, gave 33 parts in 10,000. This room was the south-easterly room in the second story. After the changes were made, an examination was made on a clear day, brisk south-westerly breeze, outside temperature 32°; a good fire in the furnace, and also in the heater in the ventilating shaft. There were fifty seats, a membership of forty-nine, and forty-seven pupils and three adults present. Doors and windows closed. At the inlet which is on the westerly side, eight feet above the floor, and which has a net area of 2.96 square feet, fresh air was coming in at a temperature of 90°, and a velocity of 474 feet per minute; at the north-westerly outlet, which has a net area of 2.5 square feet, foul air was going out at a temperature of 71°, and a velocity of 280 feet; and at the south-westerly outlet, which has the same area, at a temperature of 69°, and a velocity of 300 feet. The temperature, two feet above the floor, was on the northerly and easterly sides 69°, and on the southerly side 68°. A test for carbonic acid, made fifty minutes after the commencement of the afternoon session, taken at the breathing line in the centre of the room, gave 8 parts in 10,000. There was coming in through the inlet 1403.04 cubic feet per minute of fresh air, or 28.06 for each seat, 28.63 for the membership, or 28.06 for each person present. There was going out through both outlets 1,450 cubic feet of foul air per minute, or 29 for each seat, 29.59 for the membership, or 29 for each person present.

Wellesley, Shaw School-house, Wellesley Hills. — This is a three-story wooden building, with six school-rooms, recitation and clothing rooms. An examination was made, and the ventilation found to be bad. Changes in ventilation and heating are being made, but are not yet completed enough to give an opportunity for a thorough examination. The Fuller & Warren sanitary closets have been put in, and a large heated brick ventilating shaft built. The inlet and outlet air ducts are of brick. Additional heating furnaces have been put in and cold-air rooms built.

Hunnewell School-house, Wellesley. — Decided improvements have been made in the heating of this building; but the ventilation is not yet completed. It will probably be finished another season, and promises to give good results.

Inspector Cheney reports: —

In reply to your request for a report from the northern section of the eastern district, I submit the following: —

Chapter 426 of the Acts of 1888 is well received, by those that I have found it necessary to issue orders on, in my district. I have inspected nearly every hall, lodge-room and hotel in the district, and in many cases found that sufficient egress was not provided to comply with the present law, and in every case have issued orders for more. This has been provided in some instances by connection with other buildings, but oftener by outside stairs, or fire-escape; and in hotels, where rooms were so situated that outside stairs could not be reached readily, I have caused to be placed in each of such rooms a portable fire-escape. All outside escapes have been made of iron. Numerous tenement-houses and factories have also been provided with fire-escapes; in the city of Haverhill alone over thirty have been put up during the past year. I have had but very little trouble in getting these orders complied with, and the principal delay has been with the contractors, who oftentimes have been months getting the escapes on after the contract was let.

Chapter 316 of the Acts of 1888, regulating the erection and construction of certain buildings, has not been so readily complied with as I would like to see it; and in nearly every case, when I have called their attention to the law, the builders of such buildings were entirely ignorant of such a law being in existence, and say that they look to their architect for such information, and that they said nothing about depositing plans with the inspector. I recently found such a case in the city of Lawrence. Two tenement-houses had been erected, and one of them was all plastered, when I called the owner's attention to the law. He was very much surprised, but it was the first that he had ever heard of the law; he wanted to build his building to comply with the law, and was ready then to make any changes that I thought necessary in order to do so. He stated that he thought the architect should have informed him that a set of plans for the inspector was necessary. It seems to me that this law ought to be amended so as to make the architect liable, as well as the owner.

Chapter 149 of the Acts of 1888, relating to sanitary provisions and proper ventilation in public buildings or school-houses, has been fairly well observed in most places, while in others they propose to test the law in relation to the ventilation of school-houses. In one city a number of the committee told me that they believed in good ventilation, and had no doubt but that the buildings needed ventilating; but, on account of the expense, they thought they could get out of doing it.

One great difficulty I find in carrying out the orders for ventilation in the smaller buildings in country towns, is the want of specification for the work to be done by. In most of such places the work is done by some local tinsmith or stove dealer; and, when left to their judgment and discretion, it is seldom constructed in a practical and satisfactory manner, they depending a great deal on the expansion of the air. When it is to be considered that it is circulation, instead of expansion, of air, that we are striving for, they do not seem to know much about it; and another impression that is prevalent among such dealers is, that it is impossible to heat a room unless the air is brought into it at a temperature of from 140° to 150°. My experience is, with local dealers that have done work in ventilating in my district, that I had to visit them often while such work was going on, and give them directions how to proceed, or I would find the work of no practical use when completed. I have in mind a case in my own district, where some stoves were jacketed by one of the local tinsmiths, and I did not see them until after the work was completed. At the top of the stove he had given a fair amount of space for the air to circulate, but at the base of it the jacket hugged the stove as tight as a hoop on a barrel, and then they wondered why it did not ventilate.

In one respect this law has made great improvements in school buildings. It has seemed to have effect in discarding the use of some of the older buildings that were not provided with proper sanitary and ventilation, and, instead of laying out large sums of money to put them in good condition, they have been abandoned for school purposes, and new buildings built to take their places. I have several such instances in my district; and, whenever new buildings have been built, the ventilation of them was a prominent feature in the plans. In my district, which comprises sixteen cities and towns in the northern part of Essex County, eight new school-houses have been completed, and commenced, during the present year; these eight school-houses represent fifty class-rooms, and in every building ventilation has been a prominent feature of its construction. Five school-houses have been abandoned, representing eleven rooms; and in each of the buildings abandoned, orders had been issued to ventilate them, and I have been informed that they would be vacated as soon as the new buildings were completed. I have had but one call, under chapter 399 of the Acts of 1888, providing for the inspection of such buildings in certain cases; and this case was promptly investigated and reported upon, and satisfactorily received.

Haverhill. — The Currier school-house contains twelve rooms and a basement, and is three stories high; and, when inspected, was found to be wanting both in egress and ventilation. Two stairways had been provided, but they were so near together, that, should a fire occur in a place that would obstruct one with smoke, it would also fill the other. The stairs had been constructed in the centre of the building, with two rooms on each side of them at every story. A fire-escape had been provided on the rear of the building, which was intended to provide for the rooms on the west side of the building; but the stairs were so steep that it would have been utterly impossible for school children to have gone down without falling, even under no excitement, to say nothing of the confusion attending the presence of fire in the building. As no way whatever had been provided for the scholars in the upper stories of the front part of the building, I turned my attention in this direction; and was informed that they were expected to go across the corridor and into the room on the west side and escape by the fire-escape. In case of fire, the upper corridor would naturally become filled with smoke first. I could not see how they could get out that way, as over two hundred of the smaller children were in the top story; and accordingly I issued orders for additional egress from the rooms on the front of the building, and to change the stairs on the rear fire-escape, so that no step should have over an eight-inch rise, as every step now measures twelve inches; and the order has been complied with, by building an inclosed stairway on each side of the building near the front corner, an opening having been made by a door from each room to connect with this stairway. The stairs to the rear fire-escape have been changed and the balcony improved; and now I consider this building amply provided with means for escape to accommodate about six hundred that attend school in it.

The ventilation of the building had been more neglected than the egress. Some of the furnaces had not been provided with cold-air boxes, and were taking their air from the basement, where the water-closets and urinals are located; and there was no way of getting any fresh air into the room except by windows. The air was very foul; in some rooms 20 parts of carbonic acid in

10,000 were found, and this with windows open. An order was also issued to ventilate this building, and a system of mechanical ventilation has been introduced. A fan, five feet in diameter, of the Blackman pattern, is located in an air chamber in the attic, and pipes run from every room in the building to this chamber. The pipes commence on the ground floor, with the proper size to ventilate that room, and are enlarged at every floor, and provided with direction flues which give to each room its proportionate part of areas. Cold air in boxes is provided for the furnaces, and mixing dampers are in a part of the pipes, and will be put into the rest as fast as the work can be accomplished without interfering with the schools. A one and a half horse-power electric motor furnishes power to propel the fan, which is run at the rate of two hundred and fifty revolutions per minute. In three of the rooms, where the system is completed, the amount of air exhausted was 4,573 cubic feet per minute, and the combined membership of these three rooms was 149 ; thus giving to each scholar about 30⅔ cubic feet of air per minute, and reducing the carbonic acid gas from 20 parts to 9 parts in 10,000. At the time this test was made, there were eight adults present in the room, making the number in this room sixty-four, or increasing the number that were breathing air in this room one-sixth, which would increase the carbonic acid in the same proportion. This, under ordinary circumstances, would bring it below 8 parts in 10,000. Mixing dampers are so constructed that the air coming through the hot-air register can be changed from a high temperature to a moderate or low one, at any time. A trial in one of the rooms showed a change from 35° to 70° in a very few minutes, and the entire air there was changed every six minutes and forty-five seconds. The temperature at the breathing line was exactly the same in all parts of the room, with a variation of but 4° from the floor to the breathing line, and this only in one place, near the outside wall ; at all other places the thermometers registered alike, at the floor and at the breathing line. The temperature at the foul-air outlet had fallen 2°. These tests were made in the presence of members of the school committee, who expressed themselves as being perfectly astonished at the results obtained.

Plans have been deposited with me for two two-story, eight-room brick school-houses ; and the buildings are now in process of construction. The rooms will be large and well lighted, and they will be heated, ventilated and provided with sanitary arrangements, by the Fuller & Warren Company, which guarantee perfect satisfaction in every particular.

Town of Methuen. — A new two-story, four-room wooden school-house has been built during the past year, which will be ready for occupancy at the beginning of the new year. Provisions have been made for heating this building by steam, both direct and indirect being used. Two foul-air stacks have been constructed, of sufficient capacity to remove the foul air, and are to be heated to produce a current. The fresh air will be supplied in sufficient quantity, through the indirect radiator, to give the scholars in this building the required amount of fresh air per capita. The rooms are 30 feet by 32 feet by 12 feet high. They are well lighted, having windows on three sides. The building is pleasantly situated, and is quite ornamental.

Methuen High School. — Is a three-story, nine-room wooden building, and is built in the shape of the letter T. In this building all grades are taught, from the primary up. The rooms are 35 by 35 by 13 feet high, and are well lighted, having windows on three sides. There are front and back stairs, making good egress, even from a three-story building. When I inspected it, I found that the main corridor from front to rear was not cut off in any way, and a fire occurring in one stairway would obstruct the other with smoke. I also found the air in some of the rooms quite bad; nevertheless, there were two hot-air registers, 16 by 21 inches, and one foul-air register, 12 by 19 inches, in each room. I began an investigation, and found that, although six good-sized hot-air furnaces were used to heat this building, yet the flow of air through them was not more than half the amount they should supply. On examining the furnaces, none of them were provided with cold-air boxes, and in almost every case the opening in the jacket of the furnace, left for the cold-air box, was stopped up. The cellar was dry and well lighted, but not a window open. I suggested to a member of the committee, who went with me to this building, the importance of having the furnaces supplied with a sufficient amount of cold air, and impressed upon him the need of it to supply the school-room with the same. I also showed him the necessity of a larger foul-air opening in the rooms; for, notwithstanding the large amount of air space per scholar, the air was foul, in some of the more crowded rooms 14 to 16 parts of carbonic acid gas in 10,000 being found.

I issued an order to have this building ventilated, and the corridor cut off with self-closing doors; and, while I do not approve of the system used, yet an improvement has been made. Open grates have been placed in several of the more crowded rooms, to assist the 12 by 19 inches ventilation; and when examined recently, a very good velocity was obtained, and the carbonic acid gas had been reduced to 8 parts in 10,000. The teachers say that there is much better air in their room than there used to be, yet they cannot regulate their temperature without opening their windows. The corridor has been cut off with self-closing doors, as directed, and now the egress from this building I consider good, the rooms being so connected that you can pass from front to rear on each floor. I have not approved of the means used or results obtained in this building; but, as an attempt had been made by the committee to ventilate it, I consider it my duty to report what has been done.

The Lowell Street school is a one-room building, and upon examination I found it in a very unsanitary condition. An order was issued to ventilate it; but, as this building is to be discontinued for school purposes very soon, the order was not complied with.

City of Lawrence. — While I am not able to report the progress that I would like in all the laws that I am called upon to enforce in this city, yet I am able to say that considerable is being done.

Chapter 426 of the Acts of 1888, relating to egress from buildings, is well received by the people whom I have had occasion to issue orders upon; and in all cases the orders have been complied with.

Chapter 316 of the Acts of 1888, relating to erection and construction of buildings, has been well observed, both by architect and builder. In several instances I have been consulted by the architects in this city with reference to what was necessary in order to comply with the law, while the plans were yet on their boards, and in every instance my recommendations have been carried out, so far as egress, fire-stops, fire-proof elevator wells and tinning of light wells were concerned. But some suggestions relative to ventilation of new buildings, I am sorry to say, were not observed by the committee. These, however, were matters over which the law gave me no control until the buildings were completed.

Lawrence has added two new two-story, six-room brick buildings, — the Arlington and the Essex, — to her already large number of school-houses. One is located near the west end of Essex Street, the other near the Arlington Mills. These have been added during the past year. They are an ornament to the city. The city fathers, realizing the importance of education, are willing to provide suitable buildings for the coming generation to receive their instruction in. These buildings are large, light and commodious, with ample egress, and well protected. They are supplied with the latest and best sanitary appliances known to scientific plumbing. The rooms are large and well lighted, the buildings are models of neatness and comfort. Both are built by the same plan, and a description of one describes the other. They are heated by steam, and in the centre of them is a large brick chimney, in the middle of which is a smoke flue, composed of Akron pipe, 12 inches in diameter, and around it is the foul-air shaft; in the base of the shaft are small furnaces, to heat the air when sufficient heat is not obtained from the smoke flues. Indirect radiators are provided in the basement for supplying fresh air, and pipes run from them to every room in the building; pipes are also used to conduct the foul air from the rooms, which enters the foul-air stack at the bottom. Those pipes would give excellent satisfaction, but for their insufficient size.

The plans were submitted to me, and, among other changes that I recommended, was to double the size of ventilating flues. Accordingly the size of the foul-air stack was doubled; but, for some reason or other, the pipes supplying fresh air and exhausting foul were not made to correspond; and, when tested, were supplying not over one-third the amount of air necessary to properly ventilate the room. Carbonic acid in large quantities was found in the rooms, and with this part of the construction I am not well pleased. At the time the plans were submitted to me, I recommended pipes 24 inches in diameter; and the committee proposed to put in 16 inches, but afterwards changed it to 20, and this had been reduced to 14 where it connected the outside air with the indirect radiator.

The Oliver School. — On examination of this building, I found it in such a condition, both in regard to egress and sanitation, as to clearly come under the laws, and accordingly issued orders for additional egress, improvements in the sanitaries and ventilation. While I am not able to report a compliance of all the orders, yet I can say that a most wonderful improvement has been made in the sanitaries. The school is a large, sixteen-room, three-story brick building, and contains between seven and eight hundred scholars. The out-buildings were formerly ordinary privies and vaults, and have been a constant source of annoyance to the city for years, so much so that I believe at one time they caused quite a commotion among the city officials. The old building has been removed, the vault filled up, and a new brick building has been erected in its place, supplied with a system of water-closets and urinals of the most approved pattern, with ample accommodation for all. This has been done at an expense, so I am informed, of $6,500. Additional egress has been provided, and in all nearly $8,000 has been expended on this school this year. Mayor Crawford informs me that the ventilation of the building will receive the attention of the committee next year.

Park Street Annex. — A two-room building, upon which I issued orders for additional ventilation, has been discontinued for school purposes. This was made apparent by the erection of the New Arlington School.

Saunders School. — At South Lawrence is a two-story, six-room wooden building; it is heated by steam, both direct and indirect being used. On examination, the air was found to be very bad, the indirect not being supplied with a sufficient amount of fresh air. Ordinary privies were provided for this building, with brick vaults for receptacles; and they were in a horrible condition, the effluvia from them often being noticeable in the school-room. Orders were issued, as in other cases, to put the sanitary in better condition, and improve the ventilation; and I am pleased to say that a commencement has been made, which, if carried out as begun, will place this building in good condition. The old privies have been torn down, a new building built, and a system of water-closets and slate urinals has been introduced at considerable expense; and, while I am not able to report any definite action relative to ventilating the building, yet I feel that a great improvement has been made, and the cause of foul air in the school-rooms removed in a measure. Nearly $2,000 was expended on the building for the improvements that I have mentioned. In all, Lawrence has spent about $10,000 upon the Oliver and Saunders schools this year, besides building two new six-room brick school-houses.

Town of Merrimack, Centre School. — This is a five-room wooden building, where the primary, intermediate and high schools are kept. Each room is heated by a coal stove. The building has the appearance of at some time having been moved back and a new front built onto it, where the high and intermediate schools are kept, while the primary or lower grades occupy the old part of the building. The rooms in this part are very low studded, and the air space much less per capita than in the new part, where the rooms are higher, and the larger scholars are taught. There was no way of ventilating the rooms in this building except by windows; and I found, upon examination, the various rooms in such an unsanitary condition that I deemed an overhauling of them to be of the utmost importance, both physically and mentally, to those attending school there. The presence of carbonic acid gas in so large proportions as was found here has been seldom equalled in my examination of school-rooms, 30 parts in 10,000 being registered in one place in the room, while 25 made itself manifest in another, showing that the circulation of air in the room was very poor indeed.

An attempt has been made to carry out the order, and ventilate the building. Each room in the old part has been provided with a separate and distinct flue, which is run through the roof and capped with a Pike ventilator, and, so far as the size of the flue will allow, was removing air fairly well; but the ventilators are so small that it would be impossible for them to do the work well under mechanical force; and, as not even heat has been introduced to assist a current, the amount of air removed by them is very small per capita. In one room ten feet per scholar was being exhausted, in another 6½; but, as there was no other means for furnishing fresh air except by windows, the circulation was very poor, as a test by Wolpert's air tester showed 29 parts in 10,000 of carbonic acid gas in one place, and 22 in another; thus showing that, although one-third the air necessary to produce good air in the room was being removed from the room, yet the carbonic acid had not been reduced in proportion, on account of the room not being properly supplied with pure air. If the committees would consult the inspectors with reference to what would produce the required result, and follow their instructions in such cases, in the end it would be far better for all concerned. In this case it is very well so far as it goes, but much more will have to be added before the result will be satisfactory, or approved of by this department.

Salisbury, Pike School. — This school, situated at East Salisbury, is a one-room building. The school-room is 22 feet 8 inches by 21 feet 10 inches by 10 feet high, and contains a cubic air space of 4,840 feet. The building was inspected Feb. 11, 1890, and the sanitary condition of it was such that an order was issued to ventilate it. It was heated with a wood stove on the west side of the room, and was surrounded on three sides by seats. There was no circulation of air, and, while those who sat near the stove were uncomfortably warm, those who sat farther away were cold. One very disagreeable and injurious feature about this room was the inability to heat the air near the floor, a difference of 21° being registered between the temperature on the floor and that five feet directly above it, the thermometer registering 73° five feet from the floor, and but 51° at the floor. I asked the teacher if she had complaint of cold feet from the scholars, and her reply was that it was constant, and that her own ached with the cold that minute; besides, they were all troubled a great deal with headaches. I accounted for this by their sitting in the room with cold feet. I at once issued an order to have the room properly ventilated, and soon after received a letter assuring me that my order would be carried out during vacation; and I am happy to say that the result is most satisfactory. The system used here is the jacketed stove and foul-air flue, an explanation of which may be found in previous reports.

The air in the room, when inspected, contained 20 parts of carbonic acid gas in 10,000, and the temperature ranged from 51° to 73°. When examined recently, the carbonic acid gas had been reduced to 4.6 parts in 10,000, and there was a difference of but 4° in the air from the time it left the stove until it was taken up the foul-air flue, the thermometer standing at 73° inside the jacket of the stove, and at 69° at the foul-air opening. By actual measurement, 1,510 cubic feet of air was being furnished to this room per minute, sufficient to supply the room with new air every three minutes and twenty seconds. The seating capacity of this room is thirty-four and the membership of the school twenty-nine, giving to each pupil 52 cubic feet of fresh air per minute.

The following letter was recently received from the chairman of the school committee, in answer to an inquiry how the ventilating system was working: —

SALISBURY, MASS., Oct. 21, 1890.

MR. A. J. CHENEY, *Salem, Mass.*

DEAR SIR: — Yours of the 18th instant at hand. Thus far the system of ventilation to which you refer has given satisfaction, and we see no reason for supposing it will not continue to do the same. Mr. Coffin is quite enthusiastic over it, as it works at Ring's Island, and thinks, if the tax-payers would go into the school-house and see how it works, they would stop their growling. Yesterday I visited the Pike and Cushing schools, and, while the air was so dead as to be absolutely sickening in Mr. Pettingell's room, it seemed as pure as could be in the Pike school. Natural ventilation will do for clear weather and northwest breezes, but it is not the best system for such a day as yesterday. I thought, when they were putting it in, and think now, that there would be a better draught if the foul-air flue was reduced in size, like the old-fashioned fire-place chimney, and I think that the pipe for the stove in the chimney should extend through the hood on top. With these changes I see nothing out of the way, and with this Mr. Coffin agrees.

Yours truly,

JACOB F. SPALDING.

March School. — This is a one-room building; the schoolroom has a cubic air space of 6,508 feet, and seating capacity for forty-four, with a membership of thirty. It was heated with a wood stove, and no way of supplying fresh air except by windows. A very disagreeable smell pervaded the air in the room, which was noticeable immediately on entering, and to which the teacher called my attention soon after I came in, although I had previously made the discovery. She said that that smell was always present in the building. In the first test for bad air I found 12 parts of carbonic acid in 10,000, and half an hour later I found 18 parts.

This building was ordered properly ventilated, and the order has been complied with. The system used is the same as has been described in the Pike school, and is working very satisfactorily. When I examined it recently, the room was being supplied with 1,710 cubic feet of fresh air per minute, sufficient to give to each scholar 57 cubic feet per minute, and keeping the carbonic acid down to less than 6 parts in 10,000, changing the air in the room every four minutes. The system is so arranged that a portion of the supply can be cut off at any time when the full amount is not needed to keep the air pure, and can be let on to change the temperature of the room at any time, thus doing away with opening the windows. The peculiar odor that was always present in this building has disappeared, and the air is as pure and fresh in this room as can be. The teacher is very loud in her praise of the system, and says that the air is much better in her schoolroom than it is in her sitting-room at home.

. . .

Town of Andover, New Grammar School. — This is a two-story brick building, and contains four class rooms and a large hall. The building is heated by steam, both direct and indirect being used, and is provided with a large foul-air stack in the centre, and was supposed to be ventilated sufficient to produce good air in the rooms. Registers, 20 by 28 inches, were placed in the partitions and connected with the indirect radiators, and these were supposed to furnish sufficient fresh air to ventilate the building, as these registers were placed in each room. Registers were also placed under the windows at the floor, and connected with the foul-air flue to remove the foul air from the rooms; but on each examination of the building — for I made several — they were acting as supply flues, instead of exhaust, and were supplying cold air, too. An exhaust register had also been placed in the foul-air chimney directly over the supply register, and at the top of the room, which was found on examination to be taking air from the hot-air register directly into the exhaust flue.

A general complaint had gone up against the heating arrangement, that it would not heat the building. The cold air for supplying the various indirect radiators came in from the east end of the building, through a brick passageway in the basement, which had a raised floor some three feet from the bottom; the space below the floor was used to conduct the foul air from the rooms to the base of the foul-air shaft. The foul air from several rooms was conducted through wooden boxes, and was made to turn several right angles, before reaching the chimney. This is a description of a system, I am informed, that was proposed by the architects that planned the building, and adopted by the committee that built it, and which, on examination, failed to work satisfactorily. Carbonic acid gas was found in large quantities in the various rooms of the building, and the air was apparently very bad. Accordingly an order was issued to improve the ventilation in this building, and during the vacation this summer some improvements were made, but not sufficient to meet my approval. The foul-air registers under the windows have been abandoned, and the one at the top of the room also; and in two of the rooms openings have been made direct from the rooms into the foul-air flues. These two rooms were working fairly well, and were being supplied with about 1,200 cubic feet of pure air, the exhaust registering the same as was supplied; but, as there were fifty-two scholars in this room, it did not supply enough to keep the air in a very healthy condition, as I found on testing that it contained 13 parts of carbonic acid gas in 10,000. The other three rooms in the building I found were not nearly so well provided for as these two, although an attempt had been made to ventilate them in the same way, and much the same method used. The registers under the windows had been closed, and also the one at the top of the room, and a register had been placed in the floor to exhaust the foul air, directly under the fresh-air supply in the partition. These were not working so well, as the flow of air was not as good, 740 cubic feet being supplied; and practically the exhaust was the same, although sixty-four scholars occupied the room, giving to each scholar about 11 cubic feet per minute. On testing the air, it was found to contain 22 parts of carbonic acid gas in 10,000. When it is considered that out-door air contains less than 4 parts in 10,000, and that a fairly well ventilated room should not contain over 7, we can realize that the air in this room was pretty bad. Nevertheless, the thermometer showed that what air they were getting was well circulated, as several of them, hung about the room, all registered the same. The great trouble seemed to be that the flow was not sufficient; and this was retarded principally, in my opinion, by not giving sufficient space in the radiator boxes, and by the crooked course of the extracting flues in this part of the building. When these faults are remedied, I think the results in this building will be quite satisfactory.

Andover, Ballardvale School. — This was a two-story, four-room wooden building, and, when examined, was found to be in such an unsanitary condition as to be considered unfit for use, and accordingly an order was issued to that effect. As a result of this order, a new, two-story, six-room brick building has been built, and to-day is occupied by the children that formerly attended school in the old building. This building is built on the same plan as the new ones at Lawrence, with foul-air flue in the centre, and all the rooms are connected with this foul-air shaft by pipes running to base, thus giving the exhaust the full draft of the chimney. This building is heated by hot-air furnaces, and in this respect the same difficulty exists that was so apparent in the new buildings at Lawrence.

The committee did not accept the recommendation of the inspector in regard to the size of pipes, and therefore the supply of air to the rooms is not up to the standard. In the intermediate room, with a membership of forty-eight scholars, they were getting on an average 28 feet per capita, and the carbonic acid gas was 11 parts in 10,000. This was after a session of more than an hour. The thermometers hung about the room registered an even temperature of 77°. There were no mixing dampers in the pipes, and, when the room became overheated, the transoms over the doors were brought into use to reduce the temperature.

Town of Groveland, Second South Primary School. — This was a one-room wooden building, 21 feet 6 inches by 34 feet 4 inches by 9 feet 1 inch high, and contained sixty seats, with a membership of fifty-five, and fifty present. The room was heated by a wood stove, and the temperature was very uneven. There was no way to ventilate it except by windows; and the air was found to be impregnated with carbonic acid gas to the amount of 18 parts in 10,000, with several of the windows down at the top. The teachers complained of the unsanitary condition of the building, and said that it was almost impossible to keep it looking decent. The building was a very old one, one of the oldest in the town, I judged. An order was issued to ventilate this building, and put it in good sanitary condition. The outgrowth of this order is a fine new two-room school-house, modern in design and commodious in dimensions, which will be an ornament to the village, a credit to the committee, and no doubt will be appreciated by both teacher and scholars. It is to be supplied with a modern system of heating and ventilating. It is to be heated with a hot-air furnace of sufficient capacity to furnish a fresh-air supply; and a foul-air shaft has been constructed of brick, which is to be heated, and is of sufficient capacity to exhaust ample air to ventilate this building. The building will be ready for occupancy about the first of the new year, when some of the other schools will be relieved of a portion of their scholars.

First South Primary School. — This is a one-room wooden building, 34 by 27 by 12 feet, with a seating capacity of sixty, membership of fifty-six, and forty present when the inspection was made. Heated by wood stove, and no way of supplying fresh air but by windows. On examination, 18 parts of carbonic acid in 10,000 were found in the air. An order was issued upon the school committee to ventilate the room. The committee informed me that, owing to the location of the new school-house, which I have before referred to, this building would have to be moved; after that was done, they would endeavor to comply with the order to ventilate. When visited recently, I found that the building had been moved, and was still undergoing repairs; it will be ventilated as soon as a vacation of the school occurs, so that the changes necessary to introduce a system of ventilation will not interfere with the school. This building would no doubt have been completed in season for the fall term, but for the attention required of the committee on the new building.

HAVERHILL, Nov. 28, 1890.

A. J. CHENEY, *Inspector of Factories and Public Buildings.*

DEAR SIR: — Referring to the test made on the 21st instant of the new ventilation recently introduced into the Currier school building, allow me to say that I was highly interested, and that the tests made were entirely satisfactory in those rooms that were fully completed, or where the mixing dampers had been applied. As a whole, we regard it as a complete success, and as accomplishing everything that was expected of it.

I am, sir, most respectfully,

THOMAS E. BURNHAM, *Mayor.*

Inspector Dexter reports: —

I herewith submit a report of the progress made in my district in the enforcement of the laws with which I am intrusted. In regard to the provisions of chapter 316, Acts of 1888, entitled, "An Act to regulate the erection and construction of certain buildings," some difficulty has been experienced in obtaining plans as promptly as could be wished; but, in all cases where changes in the plans were necessary, my recommendations have been promptly complied with. I have been called upon to act but in one case under chapter 399, Acts of 1888, which provides for the inspection, in certain cases, of buildings and other structures alleged to be unsafe or dangerous. This case was investigated and reported upon. The required notice was served on the owner of the building, and immediately steps were taken by him to have it made safe. But little opposition is encountered in the enforcement of the provisions of chapter 426. Nearly all orders sent under this law have been complied with, and, of those that have not, I have the assurance of the parties to whom the orders were sent that they will be complied with. Orders sent under chapter 149, Acts of 1888, entitled, "An Act to cause proper sanitary provisions and proper ventilation in public buildings and school-houses," have not been as well complied with in some cases as could have been wished and was expected. Still, it is encouraging to note with what care provisions are now made for properly ventilating all school buildings now in process of construction. In New Bedford there is now being built a three-story brick school-house, which is to have four school-rooms in the first and second stories each, and two school-rooms and hall in the third story. This building will be known as the Division Street School. This building is to have the J. F. Polsey hot-blast heating apparatus placed in it for heating and ventilation, and will, I think, give entire satisfaction. In Fall River there are now nearly completed three new two-story frame school-houses, of four rooms each. These buildings are to be ready for occupancy December 15. All the rooms in each of these buildings have a seating capacity for sixty scholars, with an area of 250 cubic feet for each scholar. Two of these buildings, viz., Eastern Avenue and Laurel Street, are to be provided with O. S. Kendall & Co.'s system for heating, ventilating and sanitary closets. The other, viz., the Fulton Street building, is to be heated and ventilated in accordance with plans of the architect, Mr. J. M. Darling of this city. I have no doubt these buildings will be well heated and ventilated, and first class in all their appointments. The Brown school-house is a three-story, brick, six-room building, and is now being supplied with a system of direct and indirect steam heating. There are to be two warm-air registers, 14 by 21 inches each, in all the rooms; and there will be two ventilating registers, each 23 by 34 inches, in every room. The ventilating flues all enter a tin-lined chamber, containing a coil of steam-pipe located in the attic directly under a large slat ventilator on the roof. This will no doubt improve the ventilation in this building very much. The following-named are some of the buildings for which orders have been sent for better ventilation: —

School Street School-house, Taunton. — This is a two-story frame building, having two school-rooms on each floor, with an average seating capacity of fifty-five, average membership about forty. The rooms are heated by a single stove and ventilated by windows. There are in the floor near the stove in the west room, first story, two registers, 10 by 12 inches each, through which the air is taken from under the building. This air has a damp, musty smell, as it comes into the room. Tests for carbonic acid in the different rooms ranged from 18 to 25 parts in 10,000.

Pine Street School-house, Taunton. — This is also a two-story frame building, with two school-rooms on each floor, and is heated and ventilated in the same manner as the School Street building. Some of the windows were found open in all the rooms. The windows were closed, and immediately after, the air was tested for carbonic acid in three of the rooms, and there was found an average of 15 parts in 10,000. An order was sent to each member of the committee on public property, directing them to provide these buildings with proper means of ventilation. All that has been done is the placing of transom windows over the doors leading from the school-rooms to the entryways, and a window board in two windows in each room, one on each side, with two tin pipes in each board. In some of the rooms the pipes are 4 inches and in others 8 inches in diameter. I am informed by the chairman of the committee this is considered good ventilation.

Fourth Street School-house, New Bedford. — This is an old, two-story frame building, with ell. There are three school-rooms in each story. When first inspected, the rooms were heated by stoves and ventilated by windows. The sanitary closets are in the basement, and in the boys' part were found to be in bad condition. Consequently, an order was sent directing that further and different sanitary provisions and means of ventilation be provided for this building. The sanitary arrangements have been improved, and hot-air furnaces have been put in, with which to heat the building; but the system provided for ventilation is a failure. This system consists of a 12 inch pipe in each room in the first story, extending to the rooms above, and so out through the roof. In the upper rooms this pipe is increased in size to 14 inches in diameter. The rooms in both stories ventilate into this one duct, through registers measuring 12 by 18 inches. By anemometer tests, there was no movement of air through the register in either room in the second story. In the lower rooms the velocity ranged from 50 to 110 feet per minute. Some of the windows were found open in all of the rooms. Immediately after closing the windows, tests were made for carbonic acid, and there was found to be an average of 12.5 parts in 10,000.

Western School-house, Provincetown. — This is a two-story, four-room frame building, with an average seating capacity of sixty-four for each room, average membership fifty-one. The rooms are heated by stoves. The only means of ventilation is by windows, except that there is a small hole in the outside wall, protected by slats. Windows were found open in all the rooms. Air tests for carbonic acid in the rooms showed an average of 15 parts in 10,000. An order was sent to each member of the committee, directing them to provide this building with proper ventilation; but up to the present time the order has not been complied with.

High School, Harwich Centre. — This is a two-story, two-room frame building, with a seating capacity in each room of forty-two, average membership forty, average attendance thirty-three. The only means of ventilation is by windows and doors. Air tests for carbonic acid showed 15 parts in 10,000. An order was sent to each member of the committee, directing them to provide this building with proper means of ventilation. Up to the present time the order has not been complied with, but I have the verbal assurance of the chairman of the committee that the orders should be complied with at once.

Lawrence Academy, Falmouth. — This building is occupied for a high school. The building is heated by stoves, and ventilated by windows. Air tests for carbonic acid showed 22 parts in 10,000. An order was sent this committee, directing them to provide this building with proper ventilation. In consequence of this order, I was informed that the building was not owned by the town, but by a corporation. The order has not as yet been complied with. I am informed, however, by the committee, that negotiations are now pending by which it is expected the town will finally come in possession of the building; and, in anticipation of future ownership, the town has voted an appropriation for the purpose of making all necessary alterations. Should the town fail to secure this building, a new one is to be built.

Union School, Westport, North Dartmouth School, Dartmouth. — These are two-story frame buildings, having one school-room in each story. The room in the first story, in both buildings, has been supplied with the Velox jacketed furnace, with which it is expected to heat and ventilate the rooms in both stories. Just how this is to be accomplished, I have not as yet been able to learn. All the heated air from the furnace is conducted direct to the upper room through a 12 inch pipe. The register in the floor over this pipe measures 10 by 13½ inches. There is no provision made to supply the rooms in the first story with fresh air. The ventilating chimney is two feet square. The smoke pipe from the furnace also enters this chimney; the foul-air duct from the upper room extends down, and connects with the chimney at its base under the first room floor; the duct from the first floor also connects with the chimney at its base on the opposite side. The outlet registers in both rooms measure 11½ by 14 inches. By anemometer test it was found there was no movement of air through the foul-air registers in the first story in either building; in the upper rooms at the outlets there was an average velocity of 210 feet, and at the inlets a velocity of 370 feet. The membership of the Westport school has been very much reduced since last inspected. The membership of one room is fifteen, the other twenty-nine, with an average attendance of ten and sixteen respectively. The cause of this falling off, I understand, is that children of Catholic parents are sent to parochial schools.

School Street School-house, Somerset. — This is a two-story, two-room frame building. Both rooms have been supplied with a Richardson-Boynton jacketed furnace. The ventilating chimney is 18 by 36 inches, and is heated only by the smoke pipe from the furnaces. There are separate flues for each room, but they are so small as to be of but very little use. When I visited this building, the wind was north-east, and raining. It was found there was not sufficient velocity to the air passing off through these flues in either room to move the fan of the anemometer. A test of the air for carbonic acid, after the school had been in session thirty-five minutes, showed 22 parts in 10,000.

Centre School-house, Mansfield. — This is an old, two-story, four-room frame building. The average seating capacity is fifty-six, average attendance about forty. The building is heated by hot-air furnaces, the only means of ventilation being the windows. The windows were open on two sides in each room. Immediately after closing the windows, an air test for carbonic acid showed an average of 14 parts in 10,000. An order was sent the committee, directing that this building be properly ventilated. I was told by a member of the committee that the matter was discussed at the town meeting in March, when it was voted to dispense with this building, and build a new one; and $15,000 was appropriated for this purpose. Later, a meeting of the town was called to reconsider this vote, and it was voted not to build; later still (in August), another meeting was held, and it was voted to build a school-house; and a building committee was appointed, but no appropriation was made. I understand that one or more of the school committee have resigned, and a meeting is soon to be held to fill vacancies, when the matter will again be brought up.

Academy School-house, Attleborough. — This is a two-story frame building, having one school-room in each story. The ventilation in this building has been very much improved during the past summer, by means of large metallic flues, which convey the heated air from the furnaces to the school-rooms, the foul air being removed by means of flues, which connect with a heated chimney built for the purpose.

Dodgeville School-house, Attleborough. — This is also a two-story frame building, with one school-room in each story. During the past summer this building has been supplied with the Barstow No. 18 jacketed stove in each room, also ventilating chimney with heater. It is arranged in nearly every respect the same as the Red Rock school-house in the city of Lynn, and is doing good work. This is the only good work, so far, that has been done in my district, where an attempt has been made to heat and ventilate by means of jacketed stoves.

High School Building, North Attleborough. — This building was fully described in my report of last year. An order was sent to the committee, directing that this building be properly ventilated; but up to the present time this order has not been complied with. I have recently received a written communication from Mr. Sanderson, superintendent of schools of North Attleborough, stating that a sub-committee had been appointed to procure plans and specifications for heating and ventilating this building, and during the winter vacation the necessary changes were to be made.

Inspector Buxton reports: —

In reviewing my work the past year, for the purpose of making the usual annual report, I find good progress has been made and satisfactory results obtained. Chapter 426 of the Acts of 1888 requires that all buildings which come under its provisions shall have ample means of egress for escape in case of fire. Regarding this law, I can repeat the statement made last year, — that compliance with its requirements grows more effective and satisfactory year by year, as public opinion becomes educated up to its requisitions, and realizes the justice and reasonableness of its demands. I am glad to report this year fewer cases of opposition to orders, or a disposition to do as little as possible to cover the requirements of the law; and, on the other hand, the number of people who are not only willing to comply with the law, but desire to do all in their power to make buildings and blocks of all descriptions more substantial, is increasing, while the desire to make them safe from accident to life and limb in case of fire is more apparent. It gives me great pleasure to feel justified in reporting that the progress in this direction is marked, and very satisfactory. I feel sure the time is not far distant when all buildings, especially those row in process of erection, will show a marked improvement in this important direction.

The committees having charge of the public school buildings have as a rule heartily co-operated with me in lessening the probabilities of accident from fire, by supplying additional means of escape where needed, and also by removing all unnecessary rubbish and combustible material from the cellars and basements. The furnace room in many cases was found located directly under the main passageways, and the woodwork surrounding the same was not properly protected; while the cellars in some school buildings were found to be far from what would be called in good sanitary condition. In all cases of this nature, when attention was called to the matter, the evil has been remedied. The committee having charge of the school buildings in the city of Springfield have been especially alert and diligent. During the spring, they, with myself, visited nearly every school building belonging to the city. All recommendations and orders were promptly and cheerfully complied with. The basement in the buildings have been made slow-burning by covering all woodwork with tin or metal lath and adamant mortar, and the removal of all combustible material has reduced the probability of accident by fire to a minimum; while the improved appearance of the basements furnishes an object lesson in neatness not to be despised, the benefits derived from compliance with all good laws being always two-fold and sometimes even an hundred-fold.

Chapter 316 of the Acts of 1888, requiring a copy of the plans and specifications of all buildings which come under its provisions to be submitted to the inspector for approval, has been fairly well complied with; although, like all new laws, it requires time for the people to become familiar with it, and much patient labor to convince the public that it is for the interest of all concerned, and not an infringement upon their liberties. This law, in my opinion, is one of the wisest legislative acts of the many passed regarding the proper construction of buildings, as by it all the other requirements are made more effective. It is utterly impossible to make an ill-constructed edifice even reasonably safe from accident in case of fire, while one properly planned and built can be made very satisfactory with but little additional cost. This fact is readily understood when attention is called to it. People at all conversant with the usual manner of constructing buildings know there are always numerous openings extending from the cellar to all parts of the building. Many of these extend from the first floor to the attic, without any obstruction. These openings are both large and small. For instance, the openings around the soil, water and steam pipes have an area of from 12 to 16 inches, forming excellent flues for conveying fire and smoke through the various rooms and hallways so quickly that the occupants might have difficulty in escaping with life. The importance of suitable fire and smoke stops at each story, cutting off all draft from one story to the others, either above or below it, and thus confining the fire for a time to the room where it started, can be readily understood. It is also evident that these stops can be provided at very little cost when the building is in process of construction. This is only one of many matters which must be considered in a well-built, slow-burning edifice. The great importance of these precautions is conceded, yet delays and obstacles often prevent the plans from reaching the inspector at the proper time. In my opinion, many of these difficulties would be removed if the architects were made personally responsible in the matter. If no faulty plans were permitted to leave their hands, there would be few poorly constructed buildings erected.

Chapter 149 of the Acts of 1888, which requires that every public building and every school-house shall be provided with proper ventilation, has occupied much of my time and thought the past year. It seems strange that the simple and very reasonable requirement that all public buildings and school-rooms should be provided with good, pure air should meet with any opposition whatever, or that it should be regarded as in any way chimerical. This state of public opinion is changing, however, since it has been shown by practical demonstration that school-rooms occupied by from forty to a hundred children, six hours daily, can be supplied with abundance of pure, fresh air, without draughts, and an even temperature maintained in all parts of the room through the day. This much has been accomplished. It is a long step in the direction in which more rapid progress will be made in the immediate future. School superintendents and teachers have been unanimously in favor of the enforcement of the law from the first, simply because their position and duties have caused them to realize how great the evil was, and the imperative necessity which existed for reform. Their interest in the matter is well illustrated by stating that in one school building, where the results obtained hardly warranted me in accepting it, the teachers were very loath to have any further changes made, as they feared that in trying to better it they would lose the great benefits already obtained; and indeed the improvement in some cases is simply marvellous. Words are inadequate to express the change for the better in the physical well-being of both teachers and pupils.

It is impossible at this date to give as detailed a report of the improvements made during the past year as I could wish, owing in some cases to the imperfection of the apparatus put in, while in other instances the work is not fully completed; but, in reviewing the work of the past year as a whole, I feel warranted in reporting the progress made as eminently satisfactory. I give below a detailed report in regard to the improvements made in a few of the school buildings in my district the past year, selecting those which may be considered fairly representative of the others: —

Elm Street School, Springfield. — This is a three-story brick building, with a French roof, which makes it practically a four-story structure. There are fourteen rooms, with a large hall in the fourth story. It has a seating capacity for six hundred, with an average attendance of about four hundred and eighty pupils. When I inspected it last April I found it heated by steam, partly direct, partly indirect, ventilation very poor, the air so bad as to make it necessary for windows to be open constantly, while the south windows must be kept closed, owing to the effluvia from the water-closets situated on that side, about eight feet from the building. Constant and thorough flushing with water was powerless to remedy the evil. The proper authorities were notified, and took the matter in hand. They made a contract with the Smead

Warming and Ventilating Company of Boston, with the following results: At my last inspection the outflow of air was on an average about 875 cubic feet per hour for each room. The circulation of air through the rooms was good, as the thermometer showed not over 1° difference at the same level, and only 1° difference between the floor line and the breathing line. The temperature at the warm-air inlet was 90°, at the outlet 70°; at the floor line, at a point furthest from the outlet and opposite the hot-air inlet, it was 70°; five feet above, 71°; at the ceiling, 75°. Carbonic acid test showed 6.4 parts in 10,000. All the rooms on the first and second floors showed very good results; those on the third story not quite as good, owing to the imperfect adjustment of the air dampers, which can be remedied. The water-closets have been ventilated, with most excellent results.

High School Building, Springfield. — This is a brick structure, practically four stories high, containing four large school-rooms, fifteen recitation rooms and a large hall in the fourth story. When inspected last spring, found it heated by steam, partly direct, partly indirect; found the means for ventilation very inadequate. The contract for improvement was awarded to the Phillips Manufacturing Company of Springfield, who have completely changed the old system. The fresh air is heated by steam (indirect radiation), carried into the rooms eight feet above the floor line. The foul air is drawn from each room at the floor line through large metal ducts which connect with two large Mill's fans placed in the attic, where the air passes out through several large ventilators in the roof. When completed, this system is expected to give satisfactory results.

Meadow Street School, West Springfield. — When I inspected this building last spring, it was a two-story, four-room brick building, badly overcrowded with pupils, without means of ventilation except doors and windows, the sanitary conditions bad. Notice was sent to the proper authorities, requiring better ventilation and improved sanitary conditions. After some delay the town appropriated money to enlarge it by the addition of two more rooms, and introduced the Fuller & Warren warming, ventilating and sanitary apparatus, with the following results: November 21, the date of my last inspection, No. 1 room contained fifty-six seats, membership sixty-five, forty-five present. Temperature of the room, 73°; temperature outside, 44°; temperature at the inlet, 98°; temperature at the outlet, 71°; temperature at the floor line, at the opposite side from the inlet, 70°; at the ceiling, directly over, 76°. Carbonic acid test, 6.4 parts in 10,000.

Inspector Brown reports : —

I am pleased to report that, in enforcing the statute requiring proper ways of egress in case of fire, I have met with but little opposition, though sometimes asked, "Did you ever know a factory to burn in daytime?" A fire-escape on a building, though it may never be used, gives the occupants a feeling of security, and in case of fire would in a great measure prevent any panic that might ensue if the only way of exit should be cut off by fire or smoke.

The statute requiring a copy of the plans of certain new buildings to be deposited with the inspector of the district in which they are to be built, though fairly complied with, sometimes occasions considerable vexation to the owner, who, when notified of his omission to deposit the plans, pleads ignorance of the requirements of the law. The building may be well-nigh completed before the inspector knows anything about it; when, had the plans been submitted in season, satisfactory ways of egress, with fire-stops and fire-proofing where necessary, could have been provided with but little additional expense. A statute holding the architect responsible for the delivery of the required plans, might possibly obviate this trouble.

The importance of the proper ventilation of school buildings is now generally admitted by all; and, as the statutes provide for the maintenance of schools, and the attendance of all children under the age of fourteen years, is it not right and proper that the State should also insist that suitably ventilated rooms are provided by those who have the schools in charge? Any law looking to the improved sanitary condition of the schools and children, when fully understood, will be well received and practically carried out by the people of Massachusetts. The facilities that I have recommended for introducing the fresh, warm air, and for removing the vitiated air, have to some at first appeared excessive; yet in most cases the suggestions given have been well received, and the ideas adopted by the committees, who have expressed themselves satisfied with the results obtained. I have also urged upon them the importance of providing neat privies, the sexes properly separated, and have recommended that the doors be kept locked, with the key accessible to the pupils. Where this has been done, it has proved a success.

I append a brief description of some of the school-houses in my district that have been ventilated during the past year, also letters received, commending the results therefrom : —

Williams School, Chelsea. — A four-story brick building, containing fourteen school-rooms and hall in the fourth story. Former ventilation about nothing, but during the past year two foul-air ducts have been built, each 7 by 4 feet net, with a supplementary heater in the base of each. Every room connects with these main foul-air shafts by a duct of an area of 5 square feet, which, with a fresh-air inlet of 640 square inches, gives each occupant of the rooms an average of 34 cubic feet of fresh air each minute.

Bloomingdale Street School, Chelsea. — Is a two-story wooden building, of four school-rooms, formerly heated by direct steam, a radiator in the two outer corners of each room. An attempt was made to supply fresh air by jacketing the base of these radiators, and admitting the air through them by an eight-inch pipe from the outside; but the cold air so condensed the steam that the rooms could not be warmed. Each room had a foul-air duct, 18 by 24 inches. Now the fresh air is admitted through a duct 16 by 38 inches to each room, warmed by passing through 160 square feet of radiating surface, and the foul air removed through ducts 33 by 25 inches from each room, heated to ensure proper velocity. This arrangement supplies an average of 44 cubic feet per minute to each teacher and pupil.

High School, Wareham. — A new, one-story wooden building, with one school-room, and recitation rooms. Warmed, ventilated, and sanitary appliances of the Fuller & Warren arrangements, having a foul-air shaft 32 by 32 inches net, with a heater at the base. The school-room has a warm fresh-air duct, 24 by 32 inches, with an outlet for the foul air of 4 square feet, connecting with the main shaft. The recitation rooms are also well ventilated, one having a fresh-air inlet of 16 by 32 inches, and one 16 by 24 inches, with outlets in proportion, also connecting with the main shaft. At the time of inspection, each one present was receiving an average of 60 cubic feet of fresh air each minute.

East Tremont School, Wareham. — A one-story wooden building, containing two school-rooms, warmed and ventilated by jacketed stoves, with a foul-air stack of 7 square feet net, with a heater in the base. This gives each pupil an average of 35 cubic feet of fresh air per minute.

Winthrop Avenue School, Revere. — A two-story, wooden building, containing seven school-rooms, formerly heated by direct steam, with no provision for admitting fresh air. Samples of air taken from this school by Professor Babcock showed 33.95 parts of carbonic acid in 10,000. Two furnaces have been added, with a proper fresh-air supply, and ducts constructed to remove the foul air. At a recent examination I found each pupil and teacher receiving an average of 32 cubic feet of fresh air each minute, the largest average in any room being 47 cubic feet, and the least 25 cubic feet per minute. In this last room Wolpert's test gave 10 parts carbonic acid in 10,000. The direct steam heating is only to be used when the furnaces fail to provide sufficient heat, and should be used at no other time.

Pauline Street School, Winthrop. — A two-story wooden building, containing six school-rooms and a hall in the second story, so arranged as to be easily made into two school-rooms, and heated by furnaces. This building was formerly but one-half the present size, two school-rooms and the hall above having been added to the former structure. The foul-air shaft was formerly used in common by each room, and the shaft terminated in the attic, a ventilator in the roof letting the air out. Owing to this construction, the foul air from one or more rooms frequently passed into some of the other rooms, varying with the wind. This has been remedied, and each room now has a separate duct of galvanized iron, leading to an air chamber in the attic, which is heated by a stove, thence to a ventilator in the roof. Although these ducts are much smaller than I would have recommended, yet, under favorable conditions, I found each pupil receiving an average of 28 cubic feet of fresh air each minute.

East Grammar School, Scituate. — A one-story wooden building, containing one school-room and one recitation room, warmed and ventilated by a jacketed stove. A fresh-air inlet of an area of 5 square feet furnishes the air for the stove, while a foul-air shaft, of some 7 square feet net, with a stove at the base, provides for its removal. At the time of my examination it was a dull, rainy day, conditions very unfavorable; yet I found each occupant of the room receiving an average of 29 cubic feet of fresh air each minute, and Wolpert's air test showed but 8 parts in 10,000 of carbonic acid. In colder and clearer weather the amount of fresh air would be materially increased.

School Street School, Middleborough. — A two-story wooden building, having two school-rooms on the first floor, and one school-room and one recitation room on the second floor. The upper room has sixty-seven pupils. It is warmed and ventilated by a fresh warm-air duct from the furnace, of an area of 4½ square feet net, the air being removed through a duct of an area of 6 square feet net. On the day of my examination, the recitation room not being used, each pupil was receiving an average of 32 cubic feet of fresh air each minute. There was also 825 cubic feet of fresh air per minute being supplied to this recitation room, which, when in use, by reducing the number in the school-room, will considerably increase the average amount here given. The two rooms on the first floor, which are ventilated similar to the one above, were each receiving an average of 33 cubic feet of fresh air per minute per pupil.

High School, Hingham. — A wooden building of two stories, one large school-room on the second floor and four recitation rooms on the first floor. This school has been well ventilated the past summer, 2,200 cubic feet of fresh air being supplied to the school-room each minute, which, as not half of the whole number of pupils are in the room at the same time, will give above 40 cubic feet per minute to each occupant of the room. The recitation rooms are also well ventilated.

Athens School, North Weymouth. — A two-story wooden building, of four school-rooms, heated by furnaces. Suitable warm-air and foul-air ducts have been provided, and at the time of inspection I found an average of 42 cubic feet of fresh air being supplied to each teacher and pupil every minute.

Franklin School, East Weymouth. — A two-story wooden building, three school-rooms and a recitation room, ventilated in a similar manner as the Athens, and each occupant of the rooms also receiving an average of 42 cubic feet of fresh air each minute.

Stoughton School, Dorchester. — A two-story wooden building, containing eight school-rooms, and having three hundred and seventy pupils. This building has been furnished with the Fuller & Warren system of heating, ventilating and sanitary arrangements. At the time of examination each teacher and pupil was receiving an average of 38 cubic feet of fresh air each minute.

Gibson School, Dorchester. — Is similar to the Stoughton, with six rooms, two hundred and fifty-eight pupils. The heating, ventilating and sanitary system used in the Stoughton has also been applied to this school.

WEYMOUTH, MASS., Nov. 18, 1890.

EDWIN Y. BROWN, *State Inspector*.

DEAR SIR: — Referring to your letter of the 8th instant, permit me to say that one of the improvements most needed in our school-houses is better ventilation. The Athens and Franklin school buildings which we were directed to provide with better ventilation, have been completed, with results that are entirely satisfactory to the committee. Before these changes were made, the teachers, experiencing the debilitating effects of rebreathing an atmosphere charged with harmful matter, attempted to remedy the evil by the pernicious practice of opening the windows and doors, thereby creating draughts that endangered the health and lives of the pupils. Complaints were frequently made to the school committee; but they were powerless to apply a remedy, because it was impossible to supply the rooms with the large amount of pure air that is absolutely essential, and at the same time remove the foul air which was always present, without other means than the ordinary hot-air furnace, and practically no ventilating flues at all. Now these buildings are well warmed and ventilated, and the pupils and teachers are enjoying an even temperature and pure air. Furthermore, I believe that these improvements have been judiciously and economically carried out, and that they will be a lasting benefit to all concerned.

Yours respectfully,

WM DRAKE, M.D.,
Chairman School Committee.

WAREHAM, Nov. 12, 1890.

EDWIN Y. BROWN, Esq.

DEAR SIR: — The ventilating apparatus placed in our new high-school building, and in the new school-house at West Tremont, has proved a complete success. We get more pure air for each scholar, by actual test, than is required by the State law. The result is very pleasing to the committee and the teachers; and, as the work was done in accordance with your views and suggestions, must be gratifying to you.

Very truly yours,

N. W. EVERETT,
Chairman School Committee.

REPORTS OF ACCIDENTS IN MANUFACTURING AND MERCANTILE ESTABLISHMENTS.

The law in relation to reports of accidents in manufacturing establishments has been in force since the first day of July, 1886. That good results have been made manifest through the operation of this statute, there is no room for doubt. The guarding of dangerous machinery, the safety of elevators, the protection of elevator openings, and many other provisions made by the legislative enactment, have all been well supplemented in the passage of the law requiring that accidents inmanufacturing establishments be reported, and the cause of the accidents shown. While the work of the inspectors of factories has been performed by them in an assiduous manner, and the foregoing provisions of law have been enforced, at the same time, this work has been in a very great degree facilitated and aided by the operation of the law relating to reports of accidents. As in my former annual reports, I include in this one an abstract of the record which has been kept of the several reports of accidents sent to this office during the year, and, as minutely as possible, give the causes which led to their occurrence. The statute of 1886, relating to the subject, reads as follows: —

[Chapter 260, Acts of 1886.]

An Act relative to reports of accidents in factories and manufacturing establishments.

Be it enacted, etc., as follows:

Section 1. All manufacturers and manufacturing corporations shall forthwith send to the chief of the Massachusetts district police a written notice of any accident to an employee while at work in any factory or manufacturing establishment operated by them, whenever the accident results in the death of said employee, or causes bodily injury of such a nature as to prevent the person injured from returning to his work within four days after the occurrence of the accident.

Sect. 2. Any person or corporation violating any of the provisions of section one of this act shall be punished by a fine not exceeding twenty dollars.

Sect. 3. The chief of the Massachusetts district police shall keep a record of all accidents so reported to him, together with a statement of the name of the person injured, the city or town where the accident occurred, and the cause thereof, and shall include an abstract of said record in his annual report.

Sect. 4. This act shall take effect on the first day of July in the year eighteen hundred and eighty-six.

The above statute was amended at the session of the General Court this year, so as to include within its provisions the proprietors of mercantile establishments throughout the Commonwealth, thus requiring the last-named class to send to the Chief of the Massachusetts District Police reports of accidents occurring in their establishments. Immediately on the passage of this amendment, due notice of the same was given to all concerned, by causing the text of the law to be sufficiently published, and by giving to the several inspectors instructions relating to the enforcement of its provisions. The amendment is given below : —

[Chap. 83, Acts of 1890.]

An Act relative to reports of accidents in factories and in manufacturing and mercantile establishments.

Be it enacted, etc., as follows :

Section one of chapter two hundred and sixty of the acts of the year eighteen hundred and eighty-six is hereby amended by striking out in line one the word "and"; by inserting in line two after the word "corporations" the words : — and proprietors of mercantile establishments, — by striking out in line four the word "or"; also by inserting in line five after the word "manufacturing" the words : — or mercantile, — so as to read as follows : — *Section 1.* All manufacturers, manufacturing corporations and proprietors of mercantile establishments shall forthwith send to the chief of the Massachusetts district police a written notice of any accident to an employee while at work in any factory, manufacturing or mercantile establishment operated by them whenever the accident results in the death of said employee or causes bodily injury of such a nature as to prevent the person injured from returning to his work within four days after the occurrence of the accident. [*Approved March 10, 1890.*

Eight hundred and forty-one accidents were reported at this office the past year, in which 849 persons were injured. In each of four cases reported, two persons were injured. In one case reported, where the accident was caused by the explosion of an iron boiling keeve, which was used for boiling cotton, one man was killed, and four others were more or less injured. The burning of a waste house, in which two women were employed, caused these women to be so badly burned, before they could escape from the building, that both died from their injuries a few days afterward. By the bursting of the cover of a dye kettle, two men were badly scalded, one of them being in a critical condition. Two men were killed in another accident, which was caused by the explosion of a "digester," used for cooking pulp. Another accident, caused by the dropping of an elevator car, occurred, in which two men who were riding on the car received injuries.

There were 42 fatal cases. Seven of these accidents were caused by being caught between the elevator car and the flooring of the building; five were killed by falling through an elevator well; four were killed by being caught and carried over shafting; two cases were where the persons were killed by a descending elevator car; two died from the effects of burns received; three deaths were caused by explosions of air cylinders or digesters; two cases were boiler explosions; two were scalded to death by falling into vats in tannery; and one death from each of the following causes: falling into a tank containing hot sugar; jumping onto an elevator car while the same was in motion; a piece of shafting falling from its bearings; the explosion of an iron boiling keeve, used for boiling cotton; being struck in the abdomen by a block of wood which was thrown from a circular saw; being drawn onto a cylinder on a carding machine; the bursting of a cylinder on a picker machine; being drawn into a hydro-extractor; falling into a hatchway; being caught by hair and drawn onto a pulley; being on a ladder which slipped, and falling with it; being struck by a bale of stock which was being hoisted at a paper mill; being caught by a belt and drawn onto a fly wheel; falling from a staging; and being struck by a belt which was parted in consequence of a pulley breaking. These several cases are given further on in this report, with such particulars in each as an examination of the facts enabled the inspectors investigating the same to ascertain.

Of the eight hundred and forty-one accidents reported, 226, or more than one-fourth of the whole number reported, were cases which I do not think came within the requirements of the statute relating to the reports of accidents, although the greater number of these latter cases occurred on the premises of the manufacturing establishments. The cases here referred to are those in which injuries were not received through operating any kind of machinery or other motive power, but were accidents which, in the nature of their occurrence, it would be impossible to foresee, or to supply safeguards to prevent. The cases thus mentioned are summed up as follows: injured by slipping or stumbling on the floor, causing the persons to fall, and in many cases to strike against machinery, and inflict wounds on various parts of the body, 34; falling from stagings, ladders, platforms and other elevated positions, 48; struck by falling bales of wool, cotton and other heavy articles, while working about the same, 42; helping to remove machinery, 17; struck on some part of the body by flying pieces of work (principally in machine and blacksmith shops), 28; using tools operated by hand, as in the case of carpenters, blacksmiths and other mechanics, 24; engaged in working about cars, 13; handling trucks used in the rooms of factories, 12; by the falling of stagings, 4; and by falling into tanks, 4. In all these cases the reports have been received and recorded alike with the others, and are placed in the files in the order in which they were reported.

The causes which led to the several accidents are, of course, many and varied. The same are arranged in a list below, stating the cause, and the number of cases in each cause, or the number of persons who were injured from a like cause. As in all the former annual reports, the number of those injured by gearing is given separately; but in almost all such cases the gearing was connected with the machine which was being operated at the time of the accident, and such number is included with those stated as caused by machinery. The list of causes is as follows: —

Injured by machinery in cotton, woollen, paper and shoe factories,		355
Injured by gearing,		111
Injured by belting, shafting and pulleys (in many cases while shifting or repairing belts),		35
Injured by circular saws,		26
Injured by planing, moulding and grooving machines (operated in wood-working establishments),		19
Injured by lathes, iron planers and machinery in machine, blacksmith shops, electric works, etc.,		47
Injured by elevators,		25
While riding on elevator and getting some part of body caught between the car and flooring,	18	
By falling through elevator well,	4	
By being struck by descending elevator car,	2	
By dropping of elevator car,	1	
By jumping from elevator car, which was in motion,	1	

Injured by falling through hatchways or hoistways,	4
Injured by fall of staging,	4
Injured while working at stationary engine,	5
Injured while removing machinery,	17
Injured by being struck by pieces of work (mostly in machine and blacksmith shops),	28
Injured while handling mechanical tools,	24
Injured by slipping or falling on floor, or against some machinery or other object,	34
Injured by falling from ladders, stagings and other elevated positions,	48
Injured by being struck by falling bales of wool, cotton and other heavy articles, while working about the same,	42
Injured by falling into tanks,	4
Injured while working about cars,	13
Injured while handling trucks used in the rooms of factories,	12
Injured by burning (in most cases by scalding),	13
Fatal cases (the causes already given),	42

The injuries received from the accidents here reported may be analyzed about as follows: Injury to the arm occurred in 66 cases. Of these, in two cases the arm was lost at the elbow, and in 1 case the arm was lost entirely, being the left arm. In 13 cases the arm was broken. Injury to the hand occurred in 96 cases (not including the fingers). In 3 cases the hand was amputated entirely, and in 2 cases it was amputated in part. The leg was injured in 37 cases. In one case the leg was cut off below the knee, in 8 cases the leg was broken, and in 6 cases the hip was injured. There were 61 cases of injury to the foot, but they were, with three or four exceptions, of a slight nature. In fact, regarding the injuries to the arm, hand and leg, except as above enumerated, the injuries were also of a slight nature. In 17 cases the ankle was injured; one of these was a broken ankle, one was dislocated, and in almost all the other cases the ankle was sprained. The injuries to the fingers amounted to 324. In 16 cases one finger was lost entire. In 68 cases one finger was lost in part. In 4 cases two fingers were lost entire, and eight were lost in part. In 3 cases three fingers lost entire, and in 4 cases three lost in part. In 4 cases all the fingers on one hand were lost, including the thumb in 1 case; and in 2 cases the thumb was lost entire, and in 8 cases it was lost in part. In 12 cases the finger-bone was broken. Except in these cases here enumerated, where the finger and thumb were lost, either in whole or in part, and where there resulted a broken finger, the injury to the thumb and finger was slight in each case, consisting only of flesh wounds.

The wrist was injured in 20 cases, in 7 of which the wrist was broken. It was dislocated in 1 case, and in most of the remaining cases the wrist was sprained. There were 10 cases in which injury occurred to the eye, in 2 of which the eye was entirely destroyed. There were 47 cases reported of injuries to the head. In 11 of these the injury was a scalp wound, in 1 the nose was broken, and the remaining cases were not of a serious nature. The collar bone was broken in 3 cases. In 19 cases injury to the rib happened, in 3 of which one rib was broken; in 6 two ribs were broken; and in 2, three ribs were broken. Fourteen of the accidents caused injury to the neck and shoulder, and in 4 of these cases the shoulder bone was dislocated. Four persons were considered to be injured internally and 3 received injury to the spine. Injury to various parts of the body occurred in 29 other cases, but the injury was not serious in either case.

Seven hundred and twelve males and one hundred and thirty-seven females were injured. As the greater risks must be taken by the male portion of employees, the more dangerous kind of machinery being operated by them, the laboring work also, which in so many instances is hazardous, must of necessity be performed by men; and it will be easily understood why the greater proportion of these injuries is received by males. On the other hand, the female portion suffer the most from injuries caused by gearing connected with the machinery operated by them.

Another fact in connection with these accidents should be here stated, as it will explain in so many cases the prime cause of injury received; and, although this same matter was dwelt upon in my last annual report, the same reason holds good at this time for another reference to the subject. I allude to the large number of injuries received while cleaning or oiling the machinery when the same was in motion, or in attempting to pick off waste, bobbins or other articles which had fallen into or lodged in some part of the machine operated. The number of persons thus injured was 112. When we find that 355 were injured while operating machinery, it will be seen that almost one-third of the number injured from this cause, or nearly thirty-two per cent., received injury through a lack of ordinary care, thus exposing themselves to greater risks, and a liability to even more serious injury. With the exercise of necessary caution on the part of these operatives, these injuries would have been averted, and the number of accidents caused by machinery would have been reduced one-third.

The reports of the inspectors who investigated the fatal and the more important cases, elicited information in each case which is given below. The greater number of elevator accidents having fatal results occurred in the city of Boston, and in the latter cases they were freight elevators. In each case is given the name of the person, the city or town, the name of the establishment where accident occurred, and the date of the accident.

Paul Hermanns, Cambridge. Revere Sugar Refinery. Date of accident, January 2. This accident was caused by falling into a tank containing a hot solution of sugar scum. The tank was situated, with several other tanks, on the upper floor of the building, and was about eight feet in depth and about the same in diameter. The tank or kettle rim is about two and a half or three feet above the floor in which it is set, the lower part being in the room below. It appears to have been the duty of the helper to allow the scum to run off, and then to clean the kettle or tank; to place a plank provided for that purpose across the top of the tank, to walk out to the centre of the plank, and then from that position remove the plug, in the centre of the kettle bottom, by means of a rod with a grasp handle, which extends from the plug, upward, and projects about two feet above the top of the kettle. This was Mr. Hermanns' duty to perform as a helper. The first intimation of the accident was when the other employees heard the cries of Mr. Hermanns, and they hurried to the scene, to find him crawling out over the edge of the kettle in a badly scalded condition. There was nothing to show that, in this instance, he used the plank provided for the purpose, as aforesaid, as it was not found, either inside of or about the kettle. The supposition is that, instead of using the plank, he stood upon the edge of the kettle, grasping for support the end of a plank lying across the beams overhead, and in this way tried to remove the plug in the bottom of the tank by means of the rod mentioned, and, losing his balance, fell into the tank. He was observed on former occasions to have done this while cleaning the tank. The injured man was sent to the Massachusetts General Hospital, where he died of his injuries the following day.

William Dempsey, North Wilbraham. Collins Manufacturing Company. Date of accident, January 9. This was an accident in which the person was killed by falling shafting. The deceased was employed with another man in running a "duster" or "thrasher" machine. His duties were, in connection with this "duster," to care for two lines of shafting, which were suspended from overhead. At the time of the accident, the "duster" was said to be overloaded with rags, which caused the belt to run off the pulley. Mr. Dempsey was standing under the drive pulley of the counter shaft, holding a stick against the side of the pulley, to keep the belt on, while the other man threw it on the main driving pulley. When it was thrown on, the belt forced Dempsey's stick to one side, at the same time the belt running off on the opposite side. The other man then took the belt from the shaft on which it was lying, and passed it back over the driving pulley. The belt lapped and wound around the shafting, pulling down the countershaft, with hangers and pulleys attached. One of the hangers in falling struck Mr. Dempsey, knocking him down, the shafting falling on him. When he was taken up, his head was found to be terribly crushed, and both legs were broken. He died from the effects of his injuries about thirty-six hours afterward. He had worked on this "duster" machine about two years.

John Russell, Lawrence. Pacific Mills. Date of accident, January 18. This was the case of a laborer employed at the above-named mills. At the time of the accident he was engaged in the new storehouse, removing merchandise from the lower story to the stories above. As the elevator was ascending from the basement, Russell, who was at the first story, ran and jumped for the elevator car, it being then about three feet above the level of the first floor. On this trip the car was loaded with beams, in weight, about twelve hundred or thirteen hundred pounds. In his attempt to get on, Russell endeavored to catch hold of the beams and pull himself onto the car, but did not get a good hold. The men on the car did not have much time to act, for the studding of the rooms in this building is low, and they were not close to the rope. They called to him to let go his hold, but he did not do so;

and, before the car could be reversed, Russell was caught between the platform and the flooring of the second story. The car being released, or reversed, Russell fell to the bottom of the elevator well, where he was taken up insensible, and died a short time afterward.

James O'Brien, Lowell. Merrimack Manufacturing Company. Date of accident, January 10. This was an accident which was caused by shafting. The person injured was a boy aged fourteen years. He was on a staging, to put cloth through an eyelet, when it appears the cloth was caught on the shafting and wound around it. He tried to pull the cloth off, and, in attempting to do so, his left hand was caught, drawing the arm around the shaft. The arm was torn off above the elbow, and he fell to the floor, breaking right leg just above the ankle. He was removed to the Lowell Hospital, where he received surgical treatment. The last report in relation to the case stated that the boy improved rapidly, and that he had recovered from his injuries, excepting, of course, the loss of the arm. The inspector who investigated this case reports that the staging or platform on which the boy was standing is about twelve or thirteen feet from the floor, and extends the whole length of the room, some fifty feet or more. The staging is situated between and immediately under two lines of shafting and pulleys, the shafting at the time being uncovered.

Francis Balfe, Taunton. Whittenton Manufacturing Company. Date of accident, January 31. This was another accident caused by shafting. Balfe was employed as a fireman in the boiler room. He mounted the top of a smoke flue for the purpose of tightening the cap of a hanger box on a shaft, which runs through the boiler room. While doing this, he was caught on the shaft by his clothing, and carried over it. He was found suspended by his clothing from the shaft, which was under one of his arms. He was injured about the upper part of his body, and had two ribs broken. The shaft is about twelve feet above the floor.

Sarah Rice and Amelia Valencour, Lowell. Tremont and Suffolk Mills. Date of accident, February 6. This accident was caused by the burning of a waste house, in which the two women were employed as waste pickers. The cause of the fire was spontaneous combustion. The fire, when fairly under way, made rapid progress, and both women, it is said, losing presence of mind, failed to make their escape until both of them were terribly burned. Mrs. Rice died from her injuries a few days after the accident, and later on Mrs. Valencour also died from the effects of the injuries she received.

John H. Bell, Palmer. Palmer Mills. Date of accident, February 19. This accident was caused by the explosion of what is known as an iron boiling keeve, which is used for boiling cotton. The cause of the explosion is unknown. Mr. Bell was so badly scalded by the hot water and steam that he died a few days afterward. There were four others who were more or less injured from the same cause, but their injuries were not of a serious nature.

Harry C. Daggett, Lowell. Massachusetts Cotton Mills. Date of accident, March 1. Mr. Daggett was working at a circular saw, and was struck in the stomach or abdomen by a block of wood, which caught in the saw and was thrown from it. He was so badly injured that he died the following day. The report says that he was familiar with the machine, and there is no way in which to account for the accident.

Julia La Mere, Holden. Jeffersonville Manufacturing Company. Date of accident, March 3. This was a fatal accident, caused by a descending elevator. The deceased was not employed at the factory, being a girl ten years of age. She was in the mill with other children, without the knowledge of the mill proprietors or the superintendent. Her companions were in the entryway below, where the elevator well was located, while the La Mere girl ran up stairs, and leaned over the elevator guard-rail to look down at the other children. The elevator car, being at the time at an upper story, started downward, catching her head between the elevator car and the guard-rail. Her skull was fractured, and she died almost immediately afterward.

John P. Howard, Boston. H. M. Richardson & Co. Date of accident, March 17. The accident was a fatal one, caused by a fall through an elevator well. Mr. Howard was at work on the third floor, sending up to the painters, on the floor above, small carriage bodies which were to be varnished. He had been missed some twenty minutes, when his body was discovered at the bottom of the elevator well. Investigation showed that the door leading to the elevator was open, and the bar was up. The supposition is, that, while at the elevator, he thoughtlessly stepped toward the well, and in this way fell through the opening.

Patrick Lynch, Lowell. Massachusetts Cotton Mills. Date of accident, March 19. This was another accident caused by falling through an elevator well, and had a fatal result. The accident occurred in the picker house. The elevator was in a tower, having on the outside two openings, one at the bottom and the other at the fourth floor, the latter opening being on a bridge connected with another building. On the inside there was an opening at each floor. The tower was lighted by electricity. Mr. Lynch entered the elevator at the lower outside opening, riding on the same to the fourth story. At this point he stepped backward and off the car platform, there being a space of two feet between the elevator car and the wall of the tower, causing him to fall through to the bottom. Lynch was so badly injured that he died a short time afterward. He was not employed in running the elevator, another man being there for that purpose. A notice had been posted, prohibiting all persons from riding on the elevator except the man whose duty it was to run the same.

Helen Bourdrow, Winchendon. M. L. Bartlett. Date of accident, April 2. This was the case of a girl about thirteen years of age, who had come into the mill to see her father, who was employed there. It appeared that she had frequently come into the mill, and had helped her father to glue together the pieces which made up the knife trays which are manufactured there. While talking to her father, who at the time was busy at a lathe, she stepped backward to a bench under which was a revolving shaft with a pulley attached, which caught her dress, drawing her in and around the shaft, and throwing her backward against the bench. She was killed instantly, her skull having been broken.

Alexander Ogle, Montague. New England Fibre Company. Date of accident, April 29. This accident was caused by the explosion of an air cylinder or tank, used in the manufacture of paper. There was a hydrogen gas blow-pipe, as an attachment to the machine, used to solder the lead lining of the digesters, and alongside was a galvanized-iron cylinder, — a tank containing air under pressure of three hundred pounds weight. Both the generator and tank were connected by small rubber hose or tubing with the end of the blow-pipe, and provided with regulating or stop cocks. The hose connection of the air cylinder was found to be leaking, and Mr. Ogle proceeded to solder it, using the said blow-pipe for the purpose. He was assisted by another employee, who was the only witness to the accident. This employee carried the slack hose. As the action of the blow-pipe came in contact with the leaking point, the cylinder, supposed to contain air only, but probably filled with gas siphoned from the generator, exploded. The hose connection was driven through Mr. Ogle's left eye, and passed out at the top of the head, causing, in all probability, instant death.

Clemence Daveau, Webster. Slater Woolen Company. Date of accident, May 7. The accident was caused by being caught in a cylinder of a carding machine. Daveau was employed in the card room, and when found, after the accident, his head and left arm had been drawn into the cylinder. When taken out, it was found that his arm and collar bone were broken. It is not known in just what manner the accident occurred, but it is supposed that, while passing between two carding machines, he must have stumbled and fallen against one of the machines, and in this way been drawn into the cylinder. Daveau was a boy about sixteen years of age. At first it was thought he would recover, but his injuries proved to be such that he died from their effects one week after the accident occurred.

Thomas Dwyer, Lawrence. E. J. Klous' Manufactory. Date of accident, May 14. This was a fatal accident, caused by the bursting of a cylinder on a picker machine. When found, he was unconscious, his skull was fractured and his left arm broken. He was alone at the time the accident occurred, and the bursting of the cylinder is a mystery. The deceased had operated machinery in this establishment for about three years. He died the next day after the accident.

John Duvree, Webster. H. N. Slater Manufacturing Company. Date of accident, June 20. Duvree was at work on drying cylinders, and stepped to the rear end for some purpose. The gears and shafting to the machine were at this end, and are covered over, with the exception of a space of about fourteen inches, which is left open for the purpose of oiling the bearings. The coupling to shaft is opposite this opening, and he must have leaned over the opening, as his clothing was caught by the coupling, and he was drawn over the machinery, and released only when his clothing gave way. He was badly bruised, and his side was considerably torn. But for the fact of his clothing giving way, he might have sustained very serious injuries.

Edward W. Ferguson, Lee. Charles R. Woodruff's Sawmill. Date of accident, June 26. This accident was caused by a boiler explosion. Mr. Ferguson was employed at the sawmill as an engineer. Just before the accident happened, he complained to Mr. Woodruff that he could not hold the water in the boiler, and he had then on one hundred pounds of steam. Mr. Woodruff told him to start the engine and run down the steam. He did as directed, and, after starting the engine, began letting water into the boiler. At that moment the explosion occurred, causing Mr. Ferguson to be thrown about thirty feet to the front of the boiler. He was badly scalded in the face and about the body, receiving also internal injuries, which caused his death about thirty-six hours after the accident. Mr. Woodruff, above named, who was the proprietor of the sawmill, was engaged at the time in sawing railroad ties. When the explosion occurred, the boiler was thrown forward and upward, striking the roof and causing the timbers of the same to fall, striking Mr. Woodruff, and bearing him down beneath them. His arm was broken, and he received other severe injuries.

LOUIS BARGIN, Worcester. Curtis Manufacturing Company. Date of accident, July 24. Mr. Bargin was employed at a centrifugal hydro-extractor. It is not exactly known how the accident occurred. It would seem, however, that he must have attempted to straighten the cloth while the cylinder was in motion, his hand being caught in a loop of the cloth. When he was seen by a man in the next room, his head and arms were in the cylinder or basket, and he was being carried around at a fearful rate of speed. Before the man could reach him to throw off the belt, he was thrown out from the machine, one of his arms being left in the cylinder. When he was taken up, life was found to be extinct. The inspector, in his report of investigation of the accident, says that he does not consider the hydro-extractor to be necessarily a dangerous machine, if due care is used while operating the same.

FRANK GARDNER, Jr., Uxbridge. Capron Woolen Company. Date of accident, July 29. Gardner was employed in running a "waste duster" machine, and he attempted to clean out the dust from the machine while the cylinder was in motion. In doing so, his arm was drawn into the machinery, and it was so badly mangled that it was found necessary to amputate it above the elbow. Nothing has since been received at this office, showing any unfavorable turn in the case, resulting from the operation.

JOHN J. QUAZIN, Worcester. Clark, Sawyer & Co. Date of accident, July 30. This was a fatal accident, occurring on an elevator. Quazin was employed in running a truck, had loaded the elevator car with goods, and then, probably, stood on top of the goods. He had reached the third story, and evidently, in trying to stop the car, reached out from the same to grasp the rope; but he very likely pulled the rope too hard, which had the effect to reverse the action of the car, which. being already loaded with goods, dropped quickly, and caused Mr. Quazin's head to be caught between the floor and the top of the elevator cab, crushing his head, and killing him instantly.

JOHN HUTCHINSON, Chicopee. Dwight Manufacturing Company. Date of accident, August 7. This accident was caused by being knocked from a floor into a hatchway, falling through the same. Mr. Hutchinson was employed as a laborer, and was engaged with others in moving or hoisting machinery through the hatchway. Hutchinson was the only one at the time at work on the third floor. It was supposed that he was near the opening, steering or guiding the machinery, as it was being hoisted, when the trap door, which was behind him, fell against him, knocking him off the floor and through the opening, a distance of twelve feet, to the floor below. His head was badly cut, three ribs were fractured and one shoulder was contused, and he received other injuries which caused his death a few days afterward.

AMABLE GORDINE and PETER PARENT, Gill. New England Fibre Company. Date of accident, August 1. This was a fatal accident, resulting in the death of both men. Amable Gordine was employed as a night hand, and had charge of three digesters, used for cooking pulp. About ten o'clock he went from the boiler room to the building where the digesters were located. At the time of the accident no one but Gordine was in the room, and the cause of the explosion of the digester can never be explained. The digester was twenty feet long, six feet in diameter, and was made of five-eighths-inch steel plate, double riveted, the top being bolted on with fifty-two one and one-half inch bolts. It had been tested by a boiler inspector, who pronounced it in first-class order, and being capable of standing even greater pressure than it was run at. By the explosion, the roof of the building directly over where the digester was located was torn off. Mr. Gordine was found among the debris. His injuries were of such a severe nature that he died a few hours after the accident. Peter Parent, who was employed in the machine room, ran out when he heard the explosion, and was struck by a falling timber, fracturing his skull, and causing his death in a few hours.

ELLEN O'NEIL, Lawrence. Arlington Mills. Date of accident, August 16. This accident had a fatal result. It appears that she was standing in front of a mirror which hung on a post in a passageway between two twisting frames. She was engaged in combing her hair, which was very long. In some manner her hair was caught in the rolls on one of the frames, and, although the power was shut off immediately, the scalp was torn from her head. She was taken to the hospital, where she died from the effects of her injuries the twenty-seventh day of the month, eleven days after the accident.

Jose Lucians, Fall River. Sagamore Manufacturing Company. Date of accident, August 20. This was another fatal accident, occurring on an elevator. It appears that, while the man in charge of the elevator was away from the same for a short time, Lucians got onto the elevator car and went down on it one story, and there put on the car a box containing roving. In attempting to run the elevator upward, he got himself caught between the car and the wall, in which position he was found, so much crushed that he was unable to give the circumstances of the accident. Lucians was employed to take the roving as it was delivered from the elevator, and distribute the boxes at the various spinning frames, packing it up on the creels of the frames; but it seems his duties did not require him to run the elevator. It took about twenty minutes to release him from the position in which he was found, so fast was he held there. He was so terribly crushed that he died about three hours afterward.

Samuel Norton, Auburn. Kirk, Hutchins & Stoddard. Date of accident, September 6. Norton was about to oil the bearings of the shafting, which was located near the ceiling; and to do so, he placed a ladder against a beam running parallel with the shafting, and about three feet from the same. He ascended the ladder, and, while leaning over the beam to oil the bearings, the ladder slipped, causing him to lose his balance and fall, striking his head on a machine underneath, producing concussion of the brain, from which he died two days afterward.

George Goodyear, Boston. Tubular Rivet Company. Date of accident, August 9. This was another elevator accident. The prime cause of this accident is not known. A few minutes previous to the accident, Mr. Goodyear reported at the office of the company that he was going out; and it was but a short time afterward that his headless body was found at the bottom of the elevator well, and his head on the platform of the car. No one was witness to the accident, but it was surmised that he pushed the automatic gate above his head, and while he was reaching for the shipper rope to start the elevator up from the lower floor, he was caught in that position between the platform of the car and the gate, and carried to the next floor above, where his head was completely severed from his body.

MICHAEL SCANLAN, Boston. Elmira Woolen Mill. Date of accident, August 11. This accident was caused by falling through an elevator well. Scanlan was a boy. His body was found in the pit of a freight elevator, at the mill, 620 Atlantic Avenue. The manner in which the accident occurred is unknown, but it is supposed that he fell from one of the upper stories of the building. The report states that the boy's mind was to some degree affected, and that this theory as to the cause of the accident is not an improbable one. The report of the inspector says that the elevator opening is guarded by an automatic gate.

WILLIAM STEWART, Boston. Milford Shoe Company. Date of accident, August 6. This was another case of a boy who was killed at an elevator, and where the exact cause is unknown. The boy was alone at the elevator, it appears, and the first intimation given of the accident was when the superintendent heard a scream, and hastened to the elevator, which was then ascending rapidly, with the Stewart boy hanging from the platform by both hands. He at once caught hold of the shipper rope to stop the elevator, and just then saw the boy drop through the well with great rapidity, and strike the bottom. As to whether he was crushed between the car and the flooring, and there met his death, or whether he was killed by the fall, cannot be determined. It is not known whether he was coming up on the elevator, and attempted to get off without stopping it, or whether he was experimenting with the same. When he was taken up it was found that life was extinct.

THOMAS S. HILL, Salem. Devlin Brothers. Date of accident, August 22. This accident was caused by shafting. Mr. Hill was at work casing up a place where a chimney had been taken out, and was standing with his back toward the main shaft, which was about two feet from the side of the room, and eighteen inches from the ceiling. Directly in the rear of him the shaft projected twenty inches beyond the hanger, and a collar was on the shaft close to the hanger, from which collar projected a set screw. It is not known how he was caught on the shafting. One of the workmen found him hanging by his blouse from the shaft. The power was immediately stopped, and Hill was taken down. One arm was torn out, and his body was terribly bruised, from the effects of which he died the evening of the same day.

Joseph Delong, Winchester. Beggs & Cobb. Date of accident, September 6. This accident had a fatal result, and was caused by falling into a vat containing hot tanning liquors. Delong was alone in that part of the establishment at the time of the occurrence. The supposition is, judging from the surrounding circumstances, that he climbed up overhead, and walked along some frames and planks partially covering shafting and pulleys, for the purpose of opening a valve, to draw off from the vat into a tank a quantity of liquor; and that the wrench he used in that operation probably slipped, causing him to take a step backward, and throwing him onto the pulley or shaft, thence falling onto a pump, and from there into the vat. The injuries he received were of such a severe nature that he died the evening of the same day, the accident occurring in the morning, about nine o'clock. The inspector, in his report of investigation concerning this accident, stated that, in his opinion, some other means should be provided, when it was found necessary to open or close this valve. As it was, he gave instructions to have the pulleys and shafting more fully covered, and to have a more extended walk or platform.

Heyman Harrowitch, Boston. O. Reinstein's establishment, 79 and 81 Summer street. Date of accident, September 9. This was another fatal accident while riding on an elevator. Harrowitch was sent by his employer (Mr. Alexander, tailors, doing business on Hanover street) with a bundle of coats, to be delivered to O. Reinstein; and Harrowitch, arriving at the Kingston street side of the building, where Reinstein's place of business was, got onto the elevator there, with the bundle on his shoulder. Shortly after the elevator had commenced to ascend, the bundle was thrown from his shoulder, by being too close to the side of the well. It is said that he stooped to ascertain the cause of the sudden displacement of his bundle, when almost instantly his head came in contact with a brick projection in the elevator well, over a window, and but a short distance from the ground floor. He must have been killed instantly, as life was extinct when he was taken from the elevator.

Emily Morey, Lee. Smith Paper Company. Date of accident, September 10. Mrs. Morey was employed in hooking an elevator chain onto bales of stock, hoisted up on the outside of building. After fastening the hook to a bale she would stand one side till the bale was hoisted to one of the upper stories, and then, when the chain came down, she would fasten it by the hook to another bale. She had fastened the hook in this way, and was about twenty feet from the wall of the building at the time, and had stepped up against the wall, and near to where the bale would come as it began to rise from the ground. As the bale approached the wall, it struck another bale, changing its course somewhat, and striking Mrs. Morey with such great force as to break her shoulder blade, and to cause other injuries, undoubtedly of an internal nature, which resulted in her death the following day.

Dennis Manning, Norwood. Winslow Brothers. Date of accident, September 23. Dennis Manning was employed in a tannery, and was engaged in washing some cloth which had been used on one of the machines. It was not known in what manner the accident occurred. His absence had been noticed for about three-quarters of an hour, and was not accounted for until his body was found by a fellowworkman in a vat which contained several hundred gallons of water, in which were put a large number of sheep skins. How he came to fall into the vat is a mystery. His body was found when the skins had been taken out.

Patrick Murphy, Amesbury. Merrimac Hat Company. Date of accident, October 8. This was another fatal accident while riding on an elevator. Murphy was a boy about sixteen years of age. The elevator where the accident occurred is cased up a space of about four feet on three sides of the car. While riding on the same, he leaned over the car and looked down, when his head was caught between the casing of the elevator and the flooring above, causing almost instant death. The report says that the boy's work did not require him to go to the floor above, and he was not required to use the elevator.

Adam Thornell, Boston. C. Brigham & Co. Date of accident, October 14. Another elevator accident, and with fatal result. While taking a long step-ladder from the basement to the second floor, Thornell found that the automatic hatch would not allow him to place his ladder on the elevator platform, and so he tried to ride up with it, by placing the ladder on top of the hatch cover. These hatch covers are carried from floor to floor as the car ascends, one coming in contact with the next succeeding one above, as the elevator reaches that floor. Thornell, on reaching the hatch cover of the second story, was knocked down, and then, coming in contact with the cover of the next story, was crushed to such a fearful extent that he died from his injuries the evening of the same day.

Michael Reagan, Groveland. Groveland Mills. Date of accident, October 15. A fatal accident, which was caused by shafting. It appears that Mr. Reagan had been at work whitewashing near the gigging machine, and about ten feet from the shafting. When he got through with his work, he left the staging and placed his kit on the floor, about twelve feet from the staging, which was partially under the shafting. The shafting at the time was in motion. It is not known in what way he was caught on the shaft. Mr. Veasey, one of the proprietors, and Mr. Peabody, the master mechanic, were standing about forty feet from where the accident happened, when they heard an unusual noise, and, looking to discover the cause, saw a man revolving with the shaft. The machinery was stopped as soon as possible, and Mr. Reagan was taken from the shaft. The clothes had been stripped from his body. His right arm was broken in four places, and his body was terribly mangled. He lived only a few minutes after the accident. The shaft was nine and one-half feet from the floor, twenty-one inches from the ceiling, and two and one-half feet from the wall of the building. No reason is known why he should have been so near the shaft as to have been caught by it.

Andrew McGlinchey, Boston. John H. Pray, Sons & Co. Date of accident, October 18. This case was fatal, and caused by a fall through an elevator well. The body of Mr. McGlinchey was found at the bottom of the elevator well, and it is supposed that he must have fallen from the fifth story, as the elevator car was in the vicinity of that story. No one is known to have witnessed the accident, and therefore the manner in which he fell cannot be ascertained. The elevator openings were guarded by iron chains.

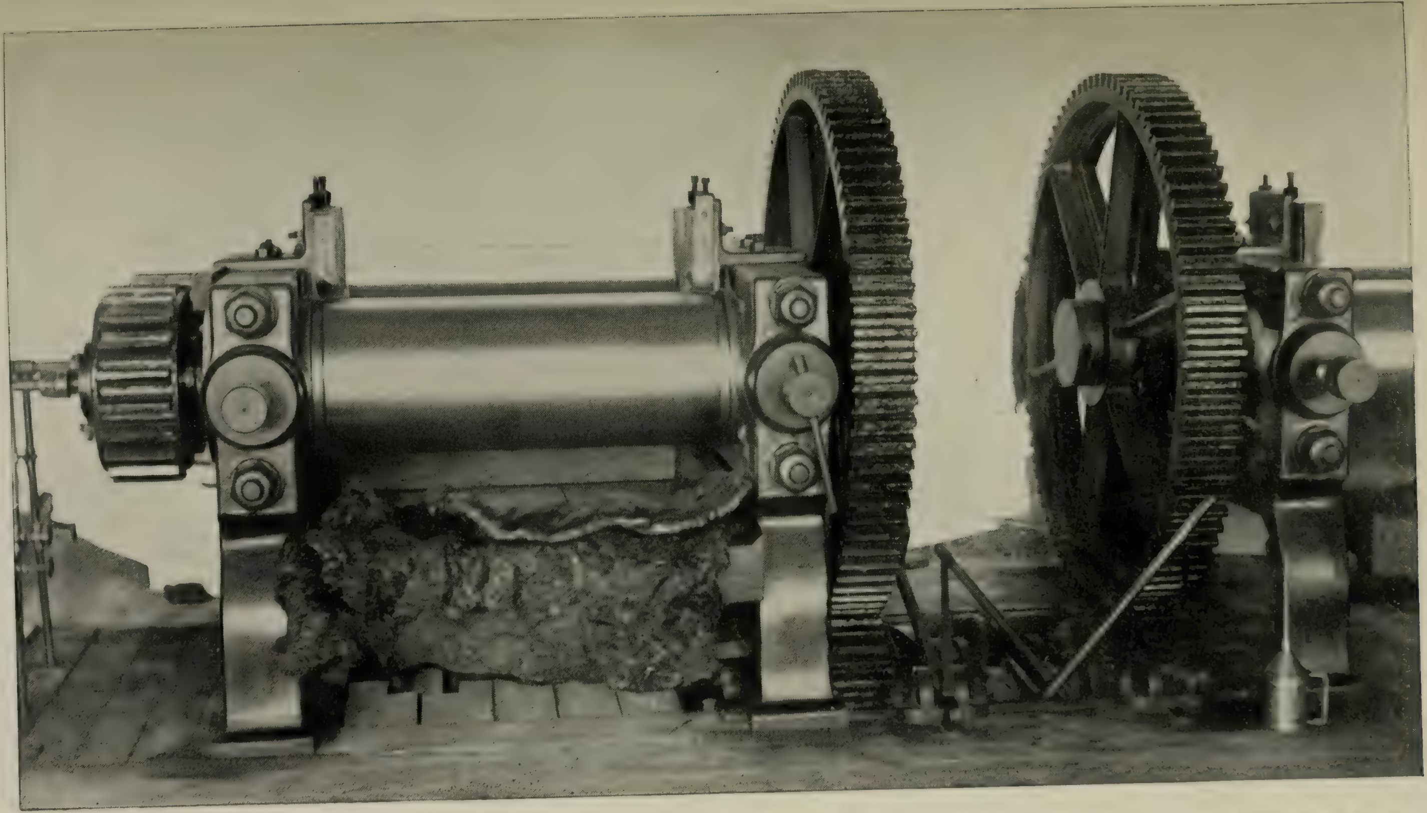
Thomas McCaffrey, Boston. Gorman Brothers' File Manufactory. Date of accident, October 22. Mr. McCaffrey was in the act of putting on a belt next to the fly wheel, and in doing so he slipped, falling upon the fly-wheel belt, and being drawn on the same to the engine. His body was crushed in a terrible manner. He was removed to the Massachusetts General Hospital, where he died about four hours after the accident. An examination of the belt and fly wheel showed that they were properly guarded, and there was no reason why Mr. McCaffrey should have attempted to put the belt on so close to the fly wheel. He did not inform any one of what he intended to do.

George R. Brown, Boston. Jones, McDuffee & Stratton. Date of accident, October 28. Brown desired to go up on the elevator, which was then ascending, and, as the platform was fully occupied, he got onto the top cross bar when it reached him, holding onto the rope with his right hand. His attention being directed to those on the platform below, he reached the top sooner than he anticipated, and his arm was caught on the wheel, drawing him over part way. He was taken to the Massachusetts General Hospital, where, as a result of his injuries, his right arm was amputated at the shoulder.

Elgin Burns, Boston. Building No. 421 Marlborough Street. Date of accident, October 30. This was a fatal accident, which occurred at an elevator in the building above mentioned, the said building being occupied as an apartment house. Mr. Burns was janitor of the building. He was bending over and looking down the elevator well, as the car was ascending, when the heavy iron weight, which acts as the counter balance, and which was descending, struck him with great force on the head, killing him instantly.

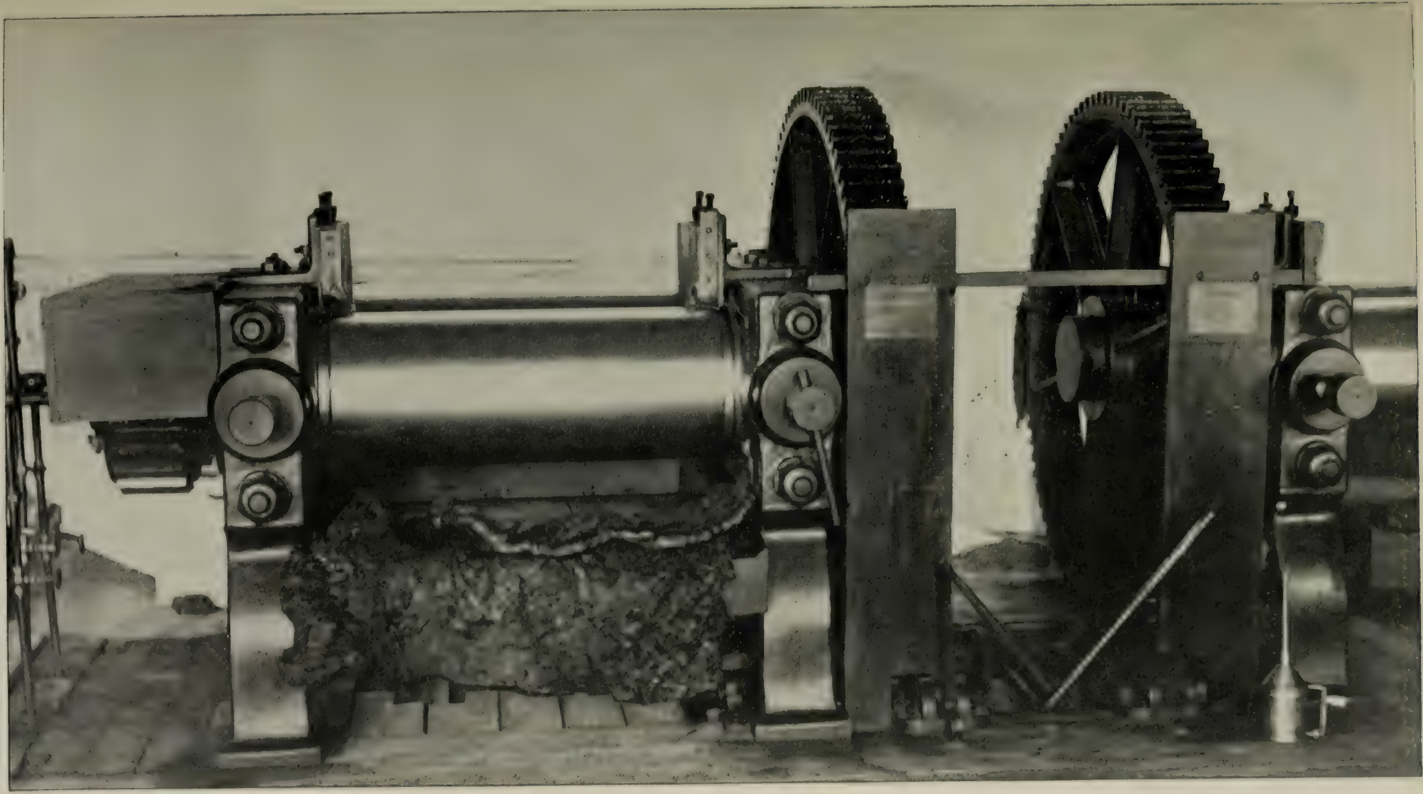
Joseph Reed, Northfield. Ansel Dickinson Mill. Date of accident, October 30. This accident had a fatal result, and was caused by a boiler explosion in a steam sawmill. Joseph Reed was employed as engineer. Mr. Evans, who had charge of the mill, went to the boiler room to have the engine stopped, in order to do some repairing. The steam gauge, which should not have indicated more than eighty-five pounds, showed a pressure of one hundred pounds. After Mr. Reed's attention had been called to the fact, and he had removed the lever bar that connects with safety valve, Mr. Evans left the room. Immediately afterward the explosion occurred, blowing the boiler and engine some six feet from their foundations, and throwing Mr. Reed about fifty-five feet from where he was standing. Mr. Evans and another man hurried to his assistance. Mr. Reed complained of burns on his right side, but thought he was not much injured, and that with their aid he could walk; but he soon became exhausted, and stopped to rest, when he almost immediately expired. Of course his death was due to internal injuries.

Anson S. Miller, Lowell. Boott Cotton Mills. Date of accident, November 17. A fatal accident caused by a fall. Mr. Miller was a night watchman in the employ of the above-named mills. His beat took him from one building to a room in another building next adjoining. On this occasion, instead of going the usual way, he undertook to make a short cut through, by way of coal pocket, and fell from railroad trestle to concrete floor beneath, about fifteen feet, striking on his head, and causing a bad fracture



LUX ENGRAVING CO. BOSTON.

GEARS UNCOVERED.



LUX ENGRAVING CO., BOSTON

GEARS COVERED.

of the skull at base of brain, and breaking his collar bone, from which injuries he died on that day, at 10 A.M. The use of this trestle was forbidden at all times as a thoroughfare.

W. Henry Mann, Medfield. Excelsior Straw Works. Date of accident, November 21. This was another fatal accident, by falling through an elevator well. Mr. Mann had been in the employ of the Excelsior Straw Works but a few days. He was at work using the elevator. No one witnessed the accident, and consequently the cause of his fall cannot be explained. He was found at the bottom of the elevator well, and was so badly injured that no information regarding the circumstances could be obtained from him. The last seen of him while at work was when he was placing a load upon the elevator car at the third floor. The injuries he received caused his death, five days after the accident.

Rosalie Patnaude, Fall River. Sagamore Manufacturing Company. Date of accident, November 24. The accident was caused by the breaking of a driving pulley. This pulley, in breaking, cut a belt in two, causing the belt to fall, one end of which struck Rosalie Patnaude on the left side of the face, as she was standing under it. The blow did not break the skin, and it left but a very slight mark. The doctors who attended her say that the edge of the belt must have struck her on the temple, which caused concussion of the brain. She was rendered unconscious from the time of the accident, and remained so till she died, the following morning, about twelve hours after the accident occurred.

In these several cases, the inspectors who investigated the same were required to make a thorough and careful examination of all the attendant facts and circumstances. Where accidents occurred in relation to which but little information could be gleaned, as in cases where the unfortunate persons were working alone at the time of the occurrence, the inspectors in every instance have sought to obtain the best theory regarding its origin, and in all cases have caused to be provided, where the same was required, proper and sufficient safeguards.

[ACTS OF 1888, CHAPTER 426.]

AN ACT IN RELATION TO WAYS OF EGRESS AND MEANS OF ESCAPE FROM FIRE IN CERTAIN BUILDINGS.

SECTION 1. Every building now or hereafter used, in whole or in part, as a public building, public or private institution, schoolhouse, church, theatre, public hall, place of assemblage or place of public resort, and every building in which ten or more persons are employed above the second story in a factory, workshop or mercantile or other establishment, and every hotel, family hotel, apartment-house, boarding-house, lodging-house or tenement-house in which ten or more persons lodge or reside above the second story, and every factory, workshop, mercantile or other establishment, the owner, lessee or occupant of which is notified in writing by the inspector hereinafter mentioned that the provisions of this act are deemed by him applicable thereto, shall be provided with proper ways of egress, or other means of escape from fire, sufficient for the use of all persons accommodated, assembling, employed, lodging or residing in such building; and such ways of egress and means of escape shall be kept free from obstruction, in good repair and ready for use. Every room above the second story in any such building in which ten or more persons are employed shall be provided, if the inspector mentioned in the following section shall so direct in writing, with more than one way of egress by stairways on the inside or outside of the building, placed as near as practicable at opposite ends of such room; stairways on the outside of the building shall have suitable railed landings at each story above the first, and shall connect with each story by doors or windows; and such landings, doors and windows shall be kept clear of ice and snow and other obstructions. Women or children shall not be employed in a factory, workshop or mercantile or other establishment, in a room above the second story from which there is only one way of egress, if the inspector mentioned in the following section shall so direct in writing. All doors and windows in any building subject to the provisions of this section shall open outwardly if the inspector mentioned in the following section shall so direct in writing. No portable seats shall be allowed in the aisles or passageways of such building during any service or entertainment held therein. The proscenium or curtain opening of all theatres shall have a fire-resisting curtain of some incombustible material, and such curtain shall be properly constructed, and shall be operated by proper mechanism; the certificate of the inspector mentioned in the following section shall be conclusive evidence of a compliance with such requirements.

SECT. 2. It shall be the duty of such inspectors of factories and public buildings, as may be assigned to such duty by the chief of the district police force, to examine, as soon as may be after the passage of this act, and thereafter from time to time, all buildings within his district subject to the provisions of this act, and it shall be the duty of the inspector of buildings of the city of Boston so to examine all such buildings within said city. In case any such building conforms, in the judgment of such inspector, to the requirements of this act, he shall issue to the owner, lessee or occupant of such building, or of any portion thereof used as above mentioned in section one, a certificate to that effect, specifying the number of persons for whom the ways of egress or means of escape from fire are deemed to be sufficient. Such certificate shall be conclusive evidence, as long as it continues in force, of a compliance on the part of the person to whom it is issued with the provisions of this act. But such certificate shall be of no effect in case a greater number of persons than therein specified are accommodated or employed, or assemble, lodge or reside within such building or portion thereof, or in case such building is used for any purposes materially different from those for which it was used at the time of the granting thereof, or in case the internal arrangements of such building are materially altered, or in case any ways of egress or means of escape from fire existing in such building at the time of such granting are stopped up, rendered unavailable or materially changed; and in no case shall such certificate continue in force for more than five years from its date. Such certificate may be revoked by such inspector at any time upon written notice to the person holding the same, or occupying the premises for which it was granted, and shall be so revoked whenever, in his opinion, any conditions or circumstances have so changed that the existing ways of egress and means of escape are no longer proper and sufficient. A copy of the said certificate shall be kept posted in a conspicuous place upon every floor of such building by the person occupying the premises covered thereby.

SECT. 3. Upon an application being made to an inspector for the granting of a certificate under this act, he shall issue to the person making the same an acknowledgment that such certificate has been applied for, and pending the granting or refusal of such certificate such acknowledgment shall have for a period of ninety days the same effect as such certificate, and such acknowledgment may be renewed by such inspector with the same effect for a further period not exceeding ninety days, and may be further renewed by the chief of the district police, until such time as such certificate shall be granted or refused.

SECT. 4. In case any change is made in any premises for which a certificate has been issued under this act, whether in the use thereof or otherwise, such as terminates the effect of such certificate, as above provided in section two, it shall be the duty of the person making the same to give written notice thereof forthwith to the inspector for the district, or to the chief of the district police, if such premises are outside of the city of Boston, or to the inspector of buildings of the city of Boston, if within said city.

SECT. 5. In case any building or portion thereof subject to the provisions of this act is found by an inspector to fail to conform thereto, or in case any change is made in such building or portion thereof such as terminates the effect of a certificate formerly granted therefor as aforesaid, it shall be the duty of such inspector to give notice in writing to the owner, lessee or occupant of such building, specifying and describing what additional ways of egress or means of escape from fire are necessary in the opinion of such inspector in order to conform to the provisions of this act and to secure the granting of a certificate as aforesaid. Notice to any agent of such owner, lessee or occupant in charge of the premises shall be sufficient notice under this section to such owner, lessee or occupant.

SECT. 6. In case any building subject to the provisions of this act is owned, leased or occupied, jointly or in severalty, by different persons, any one of such persons shall have the right to apply to any part of the outside of such building, and to sustain from any part of the wall thereof, any way of egress or means of escape from fire specified and described by an inspector as above provided, notwithstanding the objection of any other such owner, lessee or occupant; and any such way of egress or means of escape may project over the highway.

SECT. 7. When a license is required by law or municipal ordinance, in order to authorize any premises to be used for any purpose mentioned in section one, no license for such purpose shall be granted until a certificate for such building or portion thereof shall first have been obtained from an inspector as above provided, and no such license hereafter issued shall continue in force any longer than such certificate remains in force.

SECT. 8. No wooden flue or air duct for heating or ventilating purposes shall hereafter be placed in any building subject to the provisions of section one of this act, and no pipe for conveying hot air or steam in such building shall be placed, or shall remain placed, nearer than one inch to any woodwork unless protected to the satisfaction of the said inspector by suitable guards or casings of incombustible material.

Sect. 9. Every story above the second of a building subject to the provisions of section one shall be supplied with means of extinguishing fire, consisting either of pails of water or other portable apparatus, or of a hose attached to a suitable water supply and capable of reaching any part of such story; and such means of extinguishing fire shall be kept at all times ready for use and in good condition.

Sect. 10. It shall be the duty of such members of the inspection department of the district police force as may be assigned to such duty by the chief of such force to enforce the provisions of this act outside of the city of Boston, and of the inspector of buildings of the city of Boston to enforce the same within said city, and for such purpose such inspectors shall have the right of access to all parts of any buildings subject to the provisions of this act.

Sect. 11. Cities may by ordinance provide that the provisions of this act shall apply to any buildings three or more stories in height within their respective limits.

Sect. 12. It shall be the duty of every owner, lessee or occupant of any building or part thereof subject to this act to cause the provisions thereof to be carried out, and any owner, lessee or occupant failing to observe such provisions shall be subject to a fine of not less than fifty nor more than one thousand dollars; but no prosecution therefor shall be brought until four weeks after written notice from an inspector, as above provided, of the changes necessary to be made in order to conform thereto, nor then if in the meantime such changes have been made in accordance with such notification. Notice to one member of a firm, or to the clerk or treasurer of a corporation, or to the person in charge of the premises, shall be deemed sufficient notice hereunder, and such notice may be given in person or by mail. Any such owner, lessee or occupant shall be liable for all damages caused by his violation of the provisions of this act. Any person using or occupying a building contrary to the provisions of this act may be enjoined from such use or occupation in a proceeding to be had before the superior court or the supreme judicial court at the instance of the inspector, and upon the filing of a petition therefor any judge or justice of the court in which such proceeding is pending may issue a temporary injunction or restraining order, as provided in proceedings in equity.

SECT. 13. The governor of the Commonwealth is hereby authorized to appoint from time to time, as may be necessary, not exceeding ten additional members of the inspection department of the district police force, qualified to perform the duties of the members of such department.

SECT. 14. Sections fifteen to twenty inclusive of chapter one hundred and four of the Public Statutes, section two of chapter two hundred and fifty-one of the acts of the year eighteen hundred and eighty-three, chapter three hundred and twenty-six of the acts of the year eighteen hundred and eighty-five, chapter two hundred and seven of the acts of the year eighteen hundred and eighty-eight, and all acts and parts of acts inconsistent herewith, are hereby repealed.

SECT. 15. This act shall take effect on the first day of July in the year one thousand eight hundred and eighty-eight.

The magnitude of the work devolving upon the inspectors issuing certificates under the provisions of the foregoing act may be judged by the fact that accurate plans of such buildings, drawn to scale, must be deposited in this department before approval of said certificate.

CERTIFICATES ISSUED.

Public Buildings, Factories, Workshops and Tenement-houses.	Story.	Location.	Date of Certificate.	Inspector.
High School,	1st,	Marlborough,	Feb. 10, 1890,	J. A. Moore.
“ “	2d,	“	10, “	“
“ “	3d,	“	10, “	“
Hanson Block,	2d,	Hopedale,	10, “	“
“ “	3d,	“	10, “	“
Claflin School,	2d,	Newtonville,	28, “	J. H. L. Coon.
“ “	3d,	“	28, “	“
Fabric Mill boarding-house,	2d,	Hopedale,	Mar. 4, “	J. A. Moore.
“ “ “ “	3d,	“	4, “	“
“ “ “ “	4th,	“	4, “	“
H. H. Ordway & Co.,	2d,	South Framingham,	8, “	“
“ “ “	3d,	“ “	8, “	“
Hopedale House,	2d,	Hopedale,	8, “	“
“ “	3d,	“	8, “	“
“ “	4th,	“	8, “	“
Block, 211 Essex Street,	2d,	Lawrence,	21, “	A. J. Cheney.
“ “ “ “	3d,	“	21, “	“
“ “ “ “	4th,	“	21, “	“
Kelley School-house,	1st,	Newburyport,	21, “	“
“ “ “	2d,	“	21, “	“
Linwood House,	1st,	Rockport,	21, “	“
“ “	2d,	“	21, “	“
“ “	3d,	“	21, “	“
Ross Block,	1st,	Newburyport,	21, “	“

Certificates Issued — Continued.

Public Buildings, Factories, Workshops and Tenement-houses.	Story.	Location.	Date of Certificate.	Inspector.
Ross Block,	2d,	Newburyport,	Mar. 21, 1890,	A. J. Cheney.
" "	3d,	"	21, "	"
Eliot Hall,	1st,	Newton,	April 2, "	J. H. L. Coon.
" "	2d,	"	2, "	"
Central House,	1st,	Marlborough,	May 1, "	J. A. Moore.
" "	2d,	"	1, "	"
New Worcester Theatre, orchestra circle and boxes,	–	Worcester,	7, "	J. M. Dyson.
New Worcester Theatre, balcony and family circle,	–	"	7, "	"
New Worcester Theatre, gallery,	–	"	7, "	"
Lincoln House,	2d,	Milford,	14, "	J. A. Moore.
" "	3d,	"	14, "	"
Pythian Hall,	3d,	"	21, "	"
Parochial School,	1st,	Newburyport,	21, "	A. J. Cheney.
" "	2d,	"	21, "	"
Post-office Block,	2d,	Lawrence,	21, "	"
" " "	3d,	"	21, "	"
" " "	4th,	"	21, "	"
Seaver Block, hall,	–	Milford,	24, "	J. A. Moore.
Marsten's, H. A., factory,	1st,	South Framingham,	28, "	"
" " "	2d,	" "	28, "	"
" " "	3d,	" "	28, "	"
" " "	4th,	" "	28, "	"
Moseley Building, hall,	2d,	Needham,	28, "	"
Moseley Building, gallery,	2d,	"	28, "	"

Moseley Building, banquet room,	3d,	"	28, "	"
City Hotel,	2d,	Marlborough,	June 3, "	"
" "	3d,	"	3, "	"
" "	4th,	"	3, "	"
Ancient Order Hibernians, hall,	–	Natick,	18, "	"
Order United American Mechanics, hall,	–	"	18, "	"
Rice's Block,	2d,	"	18, "	"
Pemberton Hotel,	3d,	Hull,	July 12, "	E. Y. Brown.
" "	4th,	"	12, "	"
" "	5th,	"	12, "	"
Maynard Block,	3d,	Maynard,	18, "	J. H. L. Coon.
New Hall,	4th,	Worcester,	25, "	J. M. Dyson.
Lyceum Hall,	2d,	Brookline,	Sept. 15, "	J. H. L. Coon.
" "	3d,	"	15, "	"
Co-operative Hall,	–	Maynard,	22, "	"
Odd Fellows' Hall,	–	"	22, "	"
" " "	–	Hudson,	22, "	"
Porter's Block,	3d,	Randolph,	22, "	"
Everett Hall,	3d,	Hudson,	22, "	"
Jefts Block,	3d,	"	22, "	"
West Block,	3d,	Pittsfield,	22, "	F. W. Merriam.
Church Street School,	1st,	North Adams,	23, "	"
" " "	2d,	" "	23, "	"
Hoosac Street School,	1st,	Adams,	23, "	"
" " "	2d,	"	23, "	"
Housatonic School,	2d,	Housatonic,	23, "	"
" "	3d,	"	23, "	"
Main Street School,	1st,	Greenfield,	23, "	"
" " "	2d,	"	23, "	"
Renfrew School,	1st,	Renfrew Village,	23, "	"
" "	2d,	" "	23, "	"

Certificates Issued — Continued.

Public Buildings, Factories, Workshops and Tenement-houses.	Story.	Location.	Date of Certificate.	Inspector.
Renfrew School,	3d,	Renfrew Village,	Sept. 23, 1890,	F. W. Merriam.
Town Hall,	–	Great Barrington,	23, "	"
Village School,	1st,	Shelburne Falls,	24, "	"
" "	2d,	" "	24, "	"
Grammar School,	1st,	" "	24, "	"
" "	2d,	" "	24, "	"
North Grammar School,	1st,	Pittsfield,	24, "	"
" " "	2d,	"	24, "	"
Ethel Hall Block,	3d,	"	24, "	"
Town Hall,	2d,	Winthrop,	26, "	E. Y. Brown.
Arms Academy,	1st,	Shelburne Falls,	Oct. 4, "	F. W Merriam.
" "	2d,	" "	4, "	"
Crossley Hall,	3d,	Gill,	4, "	"
" "	4th,	"	4, "	"
Church Street School,	1st,	Hinsdale,	4, "	"
" " "	2d,	"	4, "	"
Cheshire Academy,	1st,	Cheshire,	4, "	"
" "	2d,	"	4, "	"
" "	3d,	"	4, "	"
Chapman Street School,	1st,	Greenfield,	4, "	"
" " "	2d,	"	4, "	"
Exchange Block,	3d,	Milford,	4, "	J. A. Moore.
" "	4th,	"	4, "	"
High School,	1st,	Stockbridge,	4, "	F. W. Merriam.
" "	2d,	"	4, "	"
" "	1st,	Lee,	4, "	"

" "	2d,	"		4, "	"
Old Deerfield School,	–	Deerfield,		4, "	"
Town Hall,	–	"		4, "	"
Training School,	–	Pittsfield,		4, "	"
Sons of Veterans' Hall,	–	Worcester,		9, "	J. M. Dyson.
Conway Hall,	–	Conway,		20, "	F. W. Merriam.
Masonic Hall,	3d,	Lee,		20, "	"
Northrop Hall,	3d,	"		20, "	"
Sumner Hall,	3d,	Great Barrington,		20, "	"
Canedy & Field's Mill,	3d,	Colrain,		20, "	"
Essex House,	2d,	Lawrence,	Nov.	3, "	A. J. Cheney.
" "	3d,	"		3, "	"
" "	4th,	"		3, "	"
Appleton Block,	2d,	Haverhill,		3, "	"
" "	3d,	"		3, "	"
" "	4th,	"		3, "	"
Fitts Block, 90 Merrimac Street,	2d,	"		3, "	"
" " " " "	3d,	"		3, "	"
" " " " "	4th,	"		3, "	"
Fitts Block, 100 Merrimac Street,	2d,	"		3, "	"
" " " " "	3d,	"		3, "	"
" " " " "	4th,	"		3, "	"
J. B. Nichols Block,	1st,	"		3, "	"
" " "	2d,	"		3, "	"
" " "	3d,	"		3, "	"
Sweeney's Block,	2d,	Lawrence,		3, "	"
" "	3d,	"		3, "	"
" "	4th,	"		3, "	"
Saunders Block,	2d,	"		3, "	"
" "	3d,	"		3, "	"
" "	4th,	"		3, "	"

Certificates Issued — Concluded.

Public Buildings, Factories, Workshops and Tenement-houses.	Story.	Location.	Date of Certificate.	Inspector.
Washington Block, ...	2d, .	Haverhill, ...	Nov. 3, 1890,	A. J. Cheney.
" "	3d, .	"	3, "	"
" "	4th, .	"	3, "	"
Noyes Block, ...	2d, .	"	3, "	"
" "	3d, .	"	3, "	"
" "	4th, .	"	3, "	"
Grange Halls, ...	–	Worcester, ...	13, "	J. M. Dyson.
Everit House, ...	3d, .	South Framingham, . .	17, "	J. A. Moore.

[Acts of 1888, Chapter 316.]

AN ACT TO REGULATE THE ERECTION AND CONSTRUCTION OF CERTAIN BUILDINGS.

Section 1. No building designed to be used in whole or in part, as a public building, public or private institution, school-house, church, theatre, public hall, place of assemblage or place of public resort, and no building more than two stories in height designed to be used above the second story, in whole or in part, as a factory, workshop or mercantile or other establishment and having accommodations for ten or more employees above said story, and no building more than two stories in height designed to be used above the second story, in whole or in part, as a hotel, family hotel, apartment house, boarding house, lodging house or tenement house and having ten or more rooms above said story, shall hereafter be erected, unless in process of erection at the date of the passage of this act, until a copy of the plans of such building has been deposited with the inspector of factories and public buildings for the district in which such building is to be located, if outside of the city of Boston, or with the inspector of buildings of the city of Boston, if within said city, together with a copy of such portion of the specifications of such building as such inspector may require, nor shall any such building be so erected without the provision of sufficient ways of egress, and other means of escape from fire, properly located and constructed; the certificate of the inspector above named endorsed, if the building is to be located outside the city of Boston, with the approval of the chief of the district police force, shall be conclusive evidence of a compliance with the provisions of this act, provided that after the granting of such certificate no change is made in the plans or specifications of such ways of egress and means of escape unless a new certificate is obtained therefor. Such inspector may require that proper fire stops shall be provided in the floors, walls and partitions of such buildings and may make such further requirements as may be necessary or proper to prevent the spread of fire therein or its communication from any steam boiler or heating apparatus; and no pipe for conveying hot air or steam in such building shall be placed nearer than one inch to any woodwork unless protected to the satisfaction of such inspector by suitable guards or casings of incombustible material, and no wooden flue or air duct for heating or ventilating purposes shall be placed in any such building.

Sect. 2. Any person erecting or constructing a building in violation of the provisions of this act shall be punished by fine of not less than fifty nor more than one thousand dollars, and such erection or construction may be enjoined in a proceeding to be had before the superior or supreme judicial court at the instance of the inspector above named, and upon the filing of a petition for such injunction any justice of the court in which such proceeding is pending may issue a temporary injunction or restraining order, as provided in proceedings in equity.

SECT. 3. This act shall take effect on the first day of October in the year one thousand eight hundred and eighty-eight.

The knowledge necessary for the discharge of the duties devolving upon the inspectors under the provisions of the foregoing act are acquired by long experience and careful observation in the erection and construction of buildings. To properly locate and provide adequate means of egress, and to place proper fire stops in floors, walls and partitions, and to decide what further requirements are necessary to prevent the spread of fire, are matters requiring careful and intelligent action on the part of the inspector.

In compliance with the above enactment, plans of the following-named buildings have been deposited with the inspector of factories and public buildings for the district in which such building is to be located.

DISTRICT NO. 1.—JOHN T. WHITE, *Inspector.*

BUILDING.	Location.	Changes Recommended.
Ward 4 school, . . .	Cambridge, . .	Doors to connect rooms.
Woodsome's tenement house.	Cambridge, . .	None.
Baldwin's tenement house, .	Cambridge, . .	Fire-stops and fire-escape.
Hotel Jarvis, . . .	Cambridge, . .	None.
First Baptist Church, . .	Malden, . .	None.
Donavan building, . .	Lowell, . .	Fire-escape.
High School, . . .	Cambridge, . .	Doors to connect rooms.
C. C. Brady, tenement, .	Somerville, . .	None.
G. B. Ketchum, tenement, .	Cambridge, . .	Fire-stops and doors cut through.
Cross Street School, . .	Lowell, . .	None.
Cabot Street School, . .	Lowell, . .	None.
Highland School, . . .	Lowell, . .	None.
J. J. McDonald, tenement, .	Cambridge, . .	None.

DISTRICT No. 1 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
High School,	Melrose,	None.
Mulliken & Moore,	Somerville,	Fire-stops.
J. P. Klim, tenement,	Cambridge,	None.
J. A. Brogan, tenement,	Cambridge,	None.
School,	Melrose,	Changes in ventilation,
E. H. Dupee, tenement,	Lowell,	None.
School,	Woburn,	None.
Clark & Abbott, tenement,	Medford,	Fire-escape.
Hotel Gilbert,	Cambridge,	None.
Melrose Grammar School,	Melrose,	None.
J. T. Gline's School,	Somerville,	None.
C. G. Pope School,	Somerville,	None.
Guild Hall,	Somerville,	None.
Ward 7 School,	Malden,	None.
Kenedy's building,	Cambridge,	None.
Shoe factory,	Reading,	None.

DISTRICT No. 2. — JOSEPH A. MOORE, *Inspector.*

BUILDING.	Location.	Changes Recommended.
W. Pratt's factory,	So. Framingham,	Stairway changes made while building.
H. A. Ordway's factory,	So. Framingham,	Stairway changes made while building.
H. Marston's factory,	So. Framingham,	Stairway changes made while building.
Manson building,	So. Framingham,	Better egress; additional fire-proofing.
C. R. Scott's block,	Milford,	Additional egress.
Tribune building,	So. Framingham,	Rear stairway changed; fire-proofing.
A. H. Morse's block,	Franklin,	Additional stairways; doors changed.
A. Coburn & Son's factory,	Hopkinton,	Additional egress.

DISTRICT No. 3. — JAMES H. L. COON, *Inspector.*

BUILDING.	Location.	Changes Recommended.
Almshouse,	Waltham,	Fire-proof ceiling over boiler.
Factory building, Boston Manufacturing Company.	Waltham,	Additional stairway.

DISTRICT No. 3 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
Handy and Lincoln, brick block.	Waltham, . .	Additional stairway from hall, and fire-stops.
High Street school-house, .	Waltham, . .	Additional stairway; fire-proof ceiling over furnaces.
Police court and police building.	Waltham.	
Stanly Dry Plate Company,	Watertown.	
Shepleigh's block, . .	Brookline.	
White's block, . . .	Brookline, . .	Fire-escape.
Chapel building, . . .	Braintree.	
McWhinney, shoe factory, .	Hudson, . .	Two additional stairways, one from each end of factory, from top floor through to ground floor.
Catholic Church, . . .	Hudson, . .	Fire-stops.
Cottage Hospital, . .	Newton, . .	Fire-stops.
Collins building, . . .	Newton, . .	Fire-stops, and additional stairway.
Claflin School-house, . .	Newton, . .	Fire-stops in ceiling.
Waban School-house, . .	Newton.	
Centre School-house, . .	Sudbury, . .	Fire-proof stairway.
Memorial Church, . .	Sudbury.	
Drake School-house, . .	Stoughton, . .	Provide brick partition.
City Hospital, . . .	Quincy, . .	Fire-stops.
Atlantic Hall, . . .	Quincy, . .	Widen main stairway and doors; fire-proof the partitions around front and rear stairway.
Willard School-house, .	Quincy.	
Scally's block, . . .	Hudson, . .	Fire escape.
Felker's block, . . .	Avon, . . .	Fire-stops.

DISTRICT No. 4. — EDWIN Y. BROWN, *Inspector.*

High School-house, . .	Abington, . .	To provide ventilation, and more sanitary appliances.
Normal School-house, . .	Bridgewater, .	Better ways of egress; better ventilation.
Leyden Park School, . .	Brockton, . .	To provide ventilation.
Gardner's block, . . .	Brockton, . .	Additional stairways and fire-stops.
Howard's block, . . .	Brockton, . .	Fire-stops.

DISTRICT NO. 4 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
Washburn's block,	Brockton,	Better way of egress, and fire-stops.
Savings bank building,	Brockton,	Better way of egress, and fire-stops.
McCann's block,	Chelsea,	Better way of egress.
Gliddan's apartment house,	Chelsea.	
Newhall's apartment house,	Chelsea,	To fire-proof elevator well.
Carruth estate, apartment house.	Chelsea,	Fire-proof stairways and fire-stops.
Boston Rubber Company's factory.	Chelsea,	Additional stairways.
Osgood School-house,	Cohasset.	
West Hanover School-house,	Hanover.	
Yacht Club house,	Hull,	Additional stairways.
Addition to Hotel Pemberton,	Hull,	Better way of egress.
Tabor Academy,	Marion,	Additional ventilation.
Copeland's block,	Middleboro,	Additional ways of egress.
Hathaway, Soule & Harrington's shoe shop,	Middleboro.	
Beachmont School-house,	Revere.	
Wareham High School,	Wareham.	
French's shoe shop,	Brockton,	Additional ways of egress.
Town Hall,	Marion,	Better ventilation.
Copeland's shoe factory,	Brockton,	Better way of egress.

DISTRICT NO. 5. — JOSEPH M. DYSON, *Inspector.*

BUILDING.	Location.	Changes Recommended.
P. D. Sexton, apartment block.	Worcester,	Fire-stops.
C. W. Wood, apartment block.	Worcester,	Additional means of egress.
Agricultural Hall,	Worcester,	Additional stairways.
G. W. Coomb's block,	Worcester,	Approved.
Holmes Street School-house,	Worcester,	Approved.
Horgan block, apartment,	Worcester,	Fire-stops.
Crompton Heirs, machine shop.	Worcester,	Approved.
Grafton Street School, addition.	Worcester,	Approved.

DISTRICT No. 5 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
Crompton block, Front St., .	Worcester, . .	Means of egress.
Hill Envelope Factory, .	Worcester, . .	Additional fire-proof stairway.
Laurel Hill Chapel, . .	Worcester, . .	Approved.
Pleasant St. Baptist Church,	Worcester, . .	Approved.
Colvin's apartment block, .	Worcester, . .	Approved.
Bowker block, . . .	Worcester, . .	Not be used for public halls.
Taylor's block, Pleasant St.,	Worcester, . .	Additional means of egress.
Forrest block, . . .	Worcester, . .	Approved.
Grammar school, upper village.	Athol, . . .	Approved.
Athol Bank block, . .	Athol, . . .	Additional means of egress.
Mowry's Hotel, . . .	Athol, . . .	Additional means of egress.
Park Hill Manufacturing Company.	Fitchburg, . .	Approved.
Dickinson block, . . .	Fitchburg, . .	Additional means of egress.
Grammar School, . .	West Fitchburg, .	Approved.
North Brookfield Shoe Company, factory.	North Brookfield,	Additional inside stairways.
Grammar School, . .	Webster, . .	Heating and ventilating.
Davenport's block, . .	Westborough, .	Additional means of egress.
Nickerson's block, . .	Leominster, . .	Approved.
St. Mary's Parish Church, .	Holden, . .	Approved.
C. B. Stevens' block, . .	Gardner, . .	Fire-stops.
Catholic Church, . . .	West Boylston, .	Approved.
Nichewaug House, . .	Petersham, . .	Additional egress.
G. H. Fisher Manufacturing Company.	Grafton, . .	Additional egress.
Kindred's apartment block,	Worcester, . .	Approved.
Worcester Horse Car Company's first floor, car house and eight tenements.	Worcester, . .	Approved.

DISTRICT No. 6. — H. A. DEXTER, *Inspector.*

A. J. Borden's block, . .	Fall River, . .	Approved.
Court house, . . .	Fall River, . .	Approved.
Flint's block, . . .	Fall River, . .	Fire-escape.

DISTRICT No. 6 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
Y. M. P. T. and B. Society Hall.	Fall River, . .	Additional stairway.
Cornell Mill, . . .	Fall River, . .	Approved.
Kerr Thread Mill, . .	Fall River, . .	Additional fire-escape.
Extension Globe Yarn Mill, No. 3.	Fall River, . .	Approved.
Tenement-house, . . .	Fall River, . .	Additional egress.
Lavigne's tenement-house, .	Fall River, . .	Approved.
Easton Avenue School-house,	Fall River, . .	Approved.
Laurel Street School-house,	Fall River, . .	Approved.
Fulton Street School-house,	Fall River, . .	Approved.
Division Street School-house,	New Bedford, .	Fire-stops.
Monte Pio Hall, . . .	New Bedford, .	Approved.
Extension Hathaway Shoe Manufactory.	New Bedford, .	Stairway changed.
Y. M. C. A. building, . .	New Bedford, .	Doors to open out.
Lewis building, . . .	New Bedford, .	Doors to open out.
Odd Fellows' building, .	No. Attleborough,	Approved.
Chatham Hotel, . . .	Chatham, . .	Fire-escape.
Aldrich House, . . .	Falmouth (Calaumet).	Approved.
Norcross House, . . .	Falmouth (Monument Beach).	Approved.
School-house, . . .	Mashpee, . .	Approved.
Y. M. C. A. Hall, . .	Taunton, . .	Approved.
Cohannet Mills, No. 3, .	Taunton, . .	Approved.

DISTRICT No. 7. — WARREN S. BUXTON, *Inspector.*

Joseph Jesonin's tenement-block.	Holyoke, . .	Fire and smoke stops.
Methodist Episcopal Church,	Holyoke, . .	Fire and smoke stops; doors to open out.
A. Ferguson's tenement-block.	Holyoke, . .	Fire and smoke stops.
Daniel O'Brien's tenement-block.	Holyoke, . .	Fire and smoke stops.
Sacred Heart School, . .	Holyoke, . .	Fire and smoke stops; additional means of egress; better ventilation.

DISTRICT NO. 7 — *Continued.*

BUILDING.	Location.	Changes Recommended.
F. Marcau's tenement-block,	Holyoke, . .	Fire and smoke stops.
M. A. Higginbottom's block,	Holyoke, . .	Fire and smoke stops; additional means of egress.
Second Baptist Church Chapel.	Holyoke, . .	Doors open outward.
Potvin and Kenney's tenement block.	Holyoke, . .	Fire and smoke stops.
T. F. Greaney's tenement-block.	Holyoke, . .	Fire and smoke stops.
J. C. Cragin's tenement-block,	Holyoke, . .	Fire and smoke stops.
Parsons Paper Company Mill.	Holyoke, . .	No changes.
Gilbert Potvin's tenement-block.	Holyoke, . .	Fire and smoke stops.
David Downing's tenement-block.	Holyoke, . .	Fire and smoke stops.
W. Ely & Son's tenement-block.	Holyoke, . .	Fire and smoke stops.
Geo. W. Davis's tenement-block.	Holyoke, . .	Fire and smoke stops.
Gilbert Potvin's tenement-block.	Holyoke, . .	Fire and smoke stops.
John St. John's tenement-block.	Holyoke, . .	Fire and smoke stops.
J. E. Cragin's tenement-block.	Holyoke, . .	Fire and smoke stops.
Albion Paper Company, addition to mill.	Holyoke, . .	No changes.
A. E. Crosby's tenement-block.	Holyoke, . .	Fire and smoke stops.
J. Forest's tenement-block, .	Holyoke, . .	Fire and smoke stops.
L. A. LaFrance, tenement-block.	Holyoke, . .	Fire and smoke stops.
John Clary's tenement-block,	Holyoke, . .	Fire and smoke stops.
J. Heninritz's tenement-block.	Holyoke, . .	Fire and smoke stops.
Geo. Mansfield's tenement-block.	Holyoke, . .	Fire and smoke stops.
W. P. Griswold's tenement-block.	Holyoke, . .	Fire and smoke stops.
T. Sullivan's tenement-block,	Holyoke, . .	Fire and smoke stops.
Alden Street School, . .	Springfield, . .	Fire and smoke stops.
Pynchon School, . . .	Springfield, . .	Fire and smoke stops, and ventilation.

DISTRICT No. 7 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
Buckingham School,	Springfield,	Fire and smoke stops, and ventilation.
T. M. Walker's block,	Springfield,	Fire and smoke stops.
J. M. Cooley's block,	Springfield,	Fire and smoke stops.
J. Fagnant's tenement-block,	Springfield,	Fire and smoke stops.
S. Sanders' tenement-block,	Springfield,	Fire and smoke stops.
Carew Street Baptist Church,	Springfield,	Fire and smoke stops; doors to open outward.
J. C. Morse's tenement-block,	Springfield,	Fire and smoke stops.
P. P. Emery & Co.'s block,	Springfield,	Fire and smoke stops
Chapman Valve Company's shop.	Indian Orchard,	Fire and smoke stops.
W. Pearl's block,	Springfield,	Fire and smoke stops.
J. Olmsted's block,	Springfield,	Fire and smoke stops.
J. C. Morse's tenement-block,	Springfield,	No changes.
Overman Wheel Company,	Chicopee Falls,	Additional means of egress.
Chicopee High School,	Chicopee,	Fire and smoke stops, and ventilation.
Daniel Dunn's tenement-block.	Chicopee Falls,	Fire and smoke stops.
Dwight Manufacturing Company's repair shop.	Chicopee,	No change.
Dwight Manufacturing Company's factory.	Chicopee,	No change.
Addition to Meadow Street School.	West Springfield,	No change.
Holden's Opera House,	Palmer,	Additional means of egress.
J. Stevens' addition to factory.	Ware,	No change.
Memorial Town Hall,	Palmer,	Fire and smoke stops.
Academy of Music,	Northampton,	Fire and smoke stops, additional means of egress.
Town Hall,	Granby,	Fire and smoke stops.
H. H. Gridley's tenement-block.	Springfield,	Fire and smoke stops.

DISTRICT No. 8. — Eastern and Northern Sections. — A. J. CHENEY, *Inspector.*

Arnold & Noyes' block,	Haverhill,	None.
Dewherst Hotel,	Haverhill,	Fire-stops; brick elevator shaft, or line a wooden one with tin.
F. G. Cummings' block,	Haverhill,	Fire-stops.

DISTRICT No. 8 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
S. B. Bartlett's block,	Haverhill,	Fire-stops; tin light-well; fireproof elevator shaft.
J. C. Tilton School,	Haverhill,	Fire-stops.
Fountain Street School,	Haverhill,	Fire-stops.
L. V. Spaulding's factory,	Haverhill,	Additional egress.
W. B. Thorn's factory,	Haverhill,	Additional egress.
J. E. Gale's block,	Haverhill,	Additional egress.
High School,	Bradford,	Fire-stops.
Knipe Brothers' factory,	Bradford,	Additional egress.
Gleason building,	Lawrence,	Tin light-well; fire-stops; fireproof elevator shaft.
Essex Street School,	Lawrence,	Fire-stops; foul-air stack enlarged; 24-inch diameter heating and ventilating pipes.
Arlington School,	Lawrence,	Fire-stops; foul-air stack enlarged; 24-inch diameter heating and ventilating pipes.
Powell Brothers' block,	Lawrence,	Fire-stops; tin light-well.
Public library,	Lawrence,	Fire-stops.
Fielding's block,	Lawrence,	Additional egress.
Adams block,	Lawrence,	None.
Arlington Mill,	Lawrence,	None.
Frank Lewis's factory,	Lawrence,	None.
Turks' Head Inn,	Rockport,	None.
Bohan block,	Amesbury,	Fire-stops; wire-lath light-well; change stairs; additional egress.
Dodge Brothers' factory,	Newburyport,	Additional egress.
School-house,	Groveland,	None.
School-house,	Methuen,	Fire-stops; 24-inch pipes for ventilating.

DISTRICT No. 10. — F. W. MERRIAM, *Inspector.*

High School,	Adams,	Enclosed fire stairs.
Maple Grove School,	Adams,	Enclosed fire stairs.
New school,	Dalton,	Additional egress.
South Lee School,	Lee,	Approved.
Stone Hotel,	Montague,	Approved.

DISTRICT No. 10 — *Concluded.*

BUILDING.	Location.	Changes Recommended.
Building Associations Mill,	North Adams,	Additional egress.
Collins' block,	North Adams,	Fire-stops.
Almshouse,	North Adams,	Approved.
Mullcare block,	North Adams,	Fire-stops.
New school,	Orange,	Approved.
Morton block,	Pittsfield,	Enclosed stairway.
Burnes' block,	Pittsfield,	Additional egress.
Morning Side School,	Pittsfield,	Additional egress.
High School changes,	Pittsfield,	Approved.

LIST OF PUBLIC BUILDINGS, FACTORIES, WORKSHOPS, TENEMENT-HOUSES AND HOTELS,

Inspected from January 1, 1890, to December 31, 1890.

TOWN OF ABINGTON.

Name of Building.	Orders given.	Compliances.
High School,	Better ventilation.	New High School being erected.
Crosset's Shoe Factory,	Fire-escape.	Complied.

TOWN OF ACTON.

Name of Building.	Orders given.	Compliances.
Exchange Hall,	Fire-escape.	Complied.
F. R. Knowlton's Factory,	Fire-escape.	Complied.
West Acton High School,	Better ventilation.	

TOWN OF ADAMS.

Name of Building.	Orders given.	Compliances.
Liberty Street School,	Sanitary and ventilation.	Improved.
Commercial Street School,	Sanitary and ventilation.	
Renfrew School,	Sanitary and ventilation.	Complied.
Zylonite School,	Sanitary and ventilation.	Improved.
Maple Grove School,	Sanitary and ventilation.	To be abandoned.
Greylock House,	None.	

TOWN OF AGAWAM.

Name of Building.	Orders given.	Compliances.
Mittineague District School,	Better ventilation, and sanitary provisions.	No appropriation by town.
Center Grammar School,	No order given.	
Center Primary School,	No order given.	
Feeding Hills Grammar School,	Better ventilation, and sanitary provisions.	Complied.
Dubouis Block,	Additional means of egress.	Complied.

TOWN OF AMESBURY.

Name of Building.	Orders given.	Compliances.
Opera House,	Change step at exit on west side; swing doors out.	Complied.
Hawthorn School,	No order.	
Rowell's Block,	Additional egress; means for extinguishing fire.	Complied.
Union Block,	Additional egress; means for extinguishing fire.	Complied.
Turner Block,	Additional egress; means for extinguishing fire.	Complied.
G. A. R. Hall,	Additional egress; means for extinguishing fire.	Complied.
Hamilton Woolen Co., No. 2 Mill,	No order.	
Hamilton Woolen Co., No. 4 Mill,	New floors on fire-escape.	Complied.
Hamilton Woolen Co., No. 5 Mill,	New floors on fire-escape.	Complied.
Hamilton Woolen Co., No. 8 Mill,	New floors on fire-escape.	Complied.
Hamilton Woolen Co., boarding-house.	Additional egress.	

TOWN OF AMHERST.

Amity Street School,	Better ventilation, and sanitary provisions.	Partially complied with.
East Street School,	No order given.	
Amherst House,	Additional means of egress.	Complied.
Town Hall,	Fire-proof curtain.	*—

TOWN OF ANDOVER.

Phillips Academy,	Improve the sanitary.	Complied.
Andover Theological Seminary,	No order.	
Bartlett Hall,	Portable fire-escapes; means for extinguishing fire.	Complied.
Phillips Hall,	Portable fire-escapes; means for extinguishing fire.	Complied.

TOWN OF ASHFIELD.

South Ashfield School,	Sanitary, and ventilation.	
The Plain School,	Sanitary, and ventilation.	
Sanderson Academy,	Sanitary, and ventilation.	

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* In process of construction.

TOWN OF ASHLAND.

Name of Building.	Orders given.	Compliances.
South School-house,	Better ventilation.	
Town Hall School,	No orders.	
New High School-house,	Better ventilation.	Complied.
Greenwood's Block,	Fire-escape; doors open out; means of extinguishing fire.	Complied.
Hathaway's Block,	Fire-escape; means of extinguishing fire.	Complied.
G. A. R. Hall,	Fire-escape; means of extinguishing fire; doors changed.	Complied.
Wiggins' Building,	Fire-escape; means of extinguishing fire.	Complied.
Central House,	Fire-escape; means of extinguishing fire.	Complied.
Scott's Hotel,	No orders.	

TOWN OF ATTLEBOROUGH.

Chilson House,	Portable fire-escapes.	Complied.
Briggs House,	Fire-escapes.	Complied.
Dean's Block,	Fire-escape.	Complied.
Academy School-house,	Better ventilation.	Complied.
Dodgville School-house,	Better ventilation.	Complied.

TOWN OF AVON.

Littlefield Factory,	Fire-escapes.	

TOWN OF AYER.

Page's Hall,	Additional egress.	
Masonic Hall,	Fire-escape.	Complied.
Robert Burns Hall,	Fire-escape.	Complied.
G. A. R. Hall,	Fire-escape.	Complied.
Sigsbee Manufacturing Co.,	Fire-escape.	Complied.
Taylor House,	Fire-escapes.	Complied.
High School,	Better ventilation.	
Shirley Street School,	Better ventilation.	Complied.

TOWN OF BECKET.

Name of Building.	Orders given.	Compliances.
Village School,	Sanitary and ventilation.	Improved.
Seminary Hall,	Fire-escape.	Complied.

TOWN OF BELLINGHAM.

Massey School-house,	Better ventilation.	Complied.

CITY OF BOSTON.

Roxbury High School,	No orders.	

TOWN OF BRADFORD.

Bradford Academy,	Means for extinguishing fire.	Complied.
Ward Hill School,	No order.	
Lock Street School,	No order.	
Hall Street School,	No order.	
High School,	Additional ventilation.	Complied.
Kimball Street School,	Additional ventilation.	Complied.

TOWN OF BRAINTREE.

Pond School-house,	Provide ventilation.	* —
Union School-house,	Provide ventilation.	
Town Hall,	Provide ventilation.	

CITY OF BROCKTON.

Eaton & Terry's Shoe Factory,	Fire-escape.	Complied.
Holmes' Block,	Two fire-escapes.	Complied.
Odd Fellows' Hall, Howard Block.	To remove decayed fire-escape, and provide better way of egress.	

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* Special committee to report at next town meeting what additional accommodations are required, and what changes are necessary to improve the several school-houses.

TOWN OF BROOKLINE.

Name of Building.	Orders given.	Compliances.
Union Hall,	Fire-proof curtain.	Complied.
Lyceum Hall,	Fire-escape.	Complied.
Harvard Hall,	Fire apparatus.	Complied.
Whyte's Block,	Fire-escape.	Complied.
Hotel Kempton,	– –	
Hotel Adelaide,	– –	

CITY OF CAMBRIDGE.

St. John's Literary Institute,	Rear stairway.	Complied.
G. A. R. Hall, Post 56,	Fire-escape.	Complied.
Odd Fellows' Hall, E. C.,	Fire-escape.	Complied.
Protection Hall,	Fire-escape.	
E. L. Shaw Factory,	Fire-escape.	
Odd Fellows' Hall, N. C.,	Fire-escape.	
Porter's Hotel,	Fire-escape.	Complied.
E. H. Luke,	Fire-escape.	Complied.
S. Tower,	Fire-escape.	
Charles Place Factory,	Better rear egress.	
G. A. R. Hall, Post 30,	Fire-escape.	Complied.

TOWN OF CHARLEMONT.

Village School,	Sanitary and ventilation.	Improved.

TOWN OF CHATHAM.

Hotel Chatham,	Fire-escape.	Complied.

TOWN OF CHELMSFORD.

District No. 8 School,	Better ventilation.	Complied.

CITY OF CHELSEA.

Name of Building.	Orders given.	Compliances.
Green's Tenement-house,	Better way of egress.	Complied.
Weston's Tenement-house,	Better way of egress.	Complied.
Bacon's Tenement-house,	Fire-escape.	*–
Mead's Tenement-house,	Doors between rear stairs and hall.	Complied.
Pythian Rink,	To rail platform and steps at rear door.	Complied.

TOWN OF CHESHIRE.

Cheshire Academy,	Sanitary and ventilation.	

TOWN OF CHESTER.

Town Hall School,	Better ventilation.	†–
Town Hall School,	Better ventilation, and sanitary provisions.	Complied.

TOWN OF CHESTERFIELD.

Center School Building,	Better ventilation, and cleanliness.	Partly complied.

TOWN OF CHICOPEE.

Springfield Street School,	No orders given.	
Spruce Street School,	Better ventilation, and sanitary provisions.	‡–
Exchange Hall,	Additional means of egress, and means for extinguishing fire.	Complied.
Masonic Hall,	Additional means of egress, and means for extinguishing fire.	Complied.

TOWN OF CLARKSBURG.

Briggsville School,	Sanitary and ventilation.	Improved.
Houghton Street School,	Sanitary and ventilation.	Complied.

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* Number of tenants reduced, so as not to come within the statute.

† Partially complied with; now in process of improvement.

‡ Partly complied; now in process of improvement.

TOWN OF COHASSET.

Name of Building.	Orders given.	Compliances.
High School, ...	Better ventilation.	*

TOWN OF CONWAY.

High School, ...	Sanitary and ventilation.	
North Center School, . . .	Sanitary and ventilation.	
Burkville School, . . .	Sanitary and ventilation.	

TOWN OF DALTON.

Center School, ...	Sanitary and ventilation.	Complied.
Center Primary School, . .	Sanitary and ventilation.	Improved.
Grammar School, . . .	Sanitary and ventilation.	Abandoned.
Craneville School, . . .	Sanitary and ventilation.	Complied.
Renfrew Mill, No. 4, . . .	Fire-pails.	Complied.
Kittredge Mill, ...	None.	
Center Block, ...	Fire-stops; swing doors out, and fire-pails.	Complied.
Irving House, ...	None.	

TOWN OF DARTMOUTH.

Nonquit Hotel Annex, . .	Electric gongs; red lights; post notice.	Complied.
Smith Mills School-house, . .	Better ventilation.	Not completed.

TOWN OF DEERFIELD.

Deerfield Street School, . .	Sanitary and ventilation.	Improved.

TOWN OF DIGHTON.

North Dighton School-house, .	Better ventilation.	

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* Order held in abeyance, as a new school-house is being constructed.

TOWN OF DRACUT.

NAME OF BUILDING.	Orders given.	Compliances.
Navy Yard School, . . .	Better ventilation.	Being complied with.
No. 5 Grammar School, . .	Better sanitaries.	Complied.
No. 7 Grammar School, . .	Better sanitaries.	Complied.

TOWN OF EAST BRIDGEWATER.

High School, ...	Better ventilation.	Not completed.

TOWN OF EASTHAMPTON.

Chapel Street East School, .	Better ventilation, and sanitary provisions.	*–
Chapel Street West School, .	Better ventilation, and sanitary provisions.	*–
Chapel Street School, . . .	No order given.	
Center Union School, . . .	Better ventilation, and sanitary provisions.	Sanitary provisions improved.
Mansion House, ...	Additional means of egress.	In process of construction.
Mansion House, ...	Watchman to be kept on duty; red lights, gongs, and notices posted in each sleeping-room.	Complied.

TOWN OF EASTON.

High School-house, . . .	Better ventilation.	

TOWN OF EGREMONT.

Town Hall, ...	None.	

TOWN OF ENFIELD.

Masonic Hall, ...	Additional means of egress, and means for extinguishing fire.	In process of construction.

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* Window-boards have been put in; not approved.

TOWN OF ERVING.

Name of Building.	Orders given.	Compliances.
Miller's Falls School, . .	Sanitary and ventilation.	Improved.

TOWN OF EVERETT.

Glendale School, ...	Better ventilation.	Complied in part.
Henderson Brothers' tenement-houses.	Provisions for safety.	Complied.
C. H. Bang's Factory, . .	Fire-escapes.	Complied.

CITY OF FALL RIVER.

Richardson House, . . .	Notices, red lights, electric gong and electric clock.	Complied.
Richardson House, . . .	Portable escapes.	Complied.
Central House, ...	Portable escapes.	Complied.
Mellen House, ...	Portable escapes.	Complied.
Wilbur Hotel, ...	Fire-escape and electric gong.	Complied.
Wilbur Hotel, ...	Portable escapes.	Complied.
Tenement-house, . . .	Fire-escape.	Complied.
Tenement-house, . . .	Better egress.	Complied.
Tenement-house, . . .	Better egress.	Complied.
Boarding-house, ...	Better egress.	Complied.
Tenement-house, . . .	Better egress.	Complied.
Tenement-house, . . .	Connect fire-escape balconies.	Complied.
Tenement-house, . . .	Connect fire-escape balconies.	Complied.
Boarding-house, ...	Fire-escape.	Complied.
Granite Block, ...	Fire-escape.	Now being complied.
Annowan Manufactory, . .	Fire-escape.	Complied.
Tenement-house, . . .	Floor fire-escape balconies.	

TOWN OF FALMOUTH.

Lawrence Academy, . . .	Better ventilation.	*
Menauhant Hotel, . . .	Post notices, and red lights.	Complied.

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* To be reported upon at next town meeting.

TOWN OF FOXBOROUGH.

Name of Building.	Orders given.	Compliances.
Berlin House,	Fire-escapes.	Complied.
Cocasset House,	Fire-escape.	Complied.
American House,	Fire-escape.	Discontinued as hotel.
Masonic Hall,	–	–
Centre School-house,	Provide ventilation.	

TOWN OF FRAMINGHAM.

3d District (brick) School-house,	Better ventilation.	Complied.
No. 2 Primary School-house,	Better ventilation.	Complied.
No. 3 Primary School-house,	No orders.	
Lokerville School-house,	No orders.	
A. H. Ordway & Company's Factory.	Means of extinguishing fire.	Complied.
Marston's Factory,	Means of extinguishing fire.	Complied.
New England Rattan Company's Factory.	Means of extinguishing fire.	Complied.

TOWN OF FRANKLIN.

Nason Street Intermediate School-house.	Better ventilation.	Complied.
Nason Street Sub-grammar School-house.	Better ventilation.	Complied.

CITY OF GLOUCESTER.

Hesperus House,	No order.	
Crescent Beach House,	Electric gongs.	Complied.
Sunset House,	No order.	
Ocean Side House,	No order.	

TOWN OF GREAT BARRINGTON.

Old Town or G. A. R. Hall,	Fire-escape.	Complied.

TOWN OF GREENFIELD.

Name of Building.	Orders given.	Compliances.
Chapman Street School,	Sanitary and ventilation.	Complied.
High School,	Sanitary and ventilation.	
Main Street School,	Sanitary and ventilation.	
Odd Fellows' Hall,	Fire-escape; fire-pails.	Complied.
Prospect Hill School,	Sanitary and ventilation.	Complied.
Prospect Hill Dormitory,	Portable fire-escapes, pails and smoke doors.	Complied.

TOWN OF GROTON.

Name of Building.	Orders given.	Compliances.
High School,	Better ventilation.	Complied.
Squanacook Hall,	Fire-stops.	Complied.
Orthodox Congregational Church,	Fire-escape.	Complied.

TOWN OF HADLEY.

Name of Building.	Orders given.	Compliances.
New Boston Street School,	No order given.	

TOWN OF HAMPDEN.

Name of Building.	Orders given.	Compliances.
No. 1 School,	Better ventilation.	
No. 2 School,	Better ventilation.	*–

TOWN OF HANOVER.

Name of Building.	Orders given.	Compliances.
West Hanover School,	Better ventilation.	†–

TOWN OF HARWICH.

Name of Building.	Orders given.	Compliances.
High School-house,	Better ventilation.	†–

CITY OF HAVERHILL.

Name of Building.	Orders given.	Compliances.
Ladies' Female Benevolent Society.	Means for extinguishing fire; additional egress.	Complied.
Felton & Braggs Block,	Means for extinguishing fire; additional egress.	Complied.
Hammond Block,	Additional egress; means for extinguishing fire.	Complied.

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* In process of construction. † Not completed.

CITY OF HAVERHILL — CONCLUDED.

NAME OF BUILDING.	Orders given	Compliances.
Briton Hall,	No order.	
Knights of Pythias Hall,	Additional egress; means for extinguishing fire.	Complied.
Good Templars' Hall,	Means for extinguishing fire.	Complied.
Lasters' Hall,	Repair fire-escape; means for extinguishing fire.	Complied.
Foresters' Hall,	Means for extinguishing fire.	Complied.
Masonic Hall,	Means for extinguishing fire; additional egress.	Complied.
Odd Fellows' Hall,	Additional egress; means for extinguishing fire.	Complied.
Hammond Block, 123 and 125,	Additional egress; means for extinguishing fire.	Complied.
Brunswick House,	Portable fire-escapes; means for extinguishing fire.	Complied.
Webster House,	Red light, notices and gongs; additional egress.	Complied.
Commonwealth Hotel,	Portable fire-escapes; means for extinguishing fire.	Complied.
Washington Block,	Additional egress; means for extinguishing fire.	Complied.
Knipe Bros.' Factory,	Means for extinguishing fire.	Complied.
Currier & Son's Factory,	Means for extinguishing fire; fire-escape.	Complied.
Block, 4 to 7 Saunders Court,	Fire-escape.	Complied.
Block, Saunders Place,	Fire-escape.	Complied.
Saunders Leather Co. Block,	Fire-escape.	Complied.
Nichols Block,	Fire-escape.	Complied.
Bishop's Block,	Additional egress.	Complied.
Russ & Carlton Block,	Fire-escape.	Complied.
Russ & Carlton Block,	Fire-escape.	Complied.
Jennings & Stevens' Factory,	Additional egress.	Complied.
Jennings, Freedman & Stevens' Factory.	Additional egress.	Complied.
Newcomb's Block,	Repair fire-escape.	Complied.
Building 34 and 36 Hammock Street.	Fire-escape.	
Building 38 and 40 Hammock Street.	Fire-escape.	
Gilman Estate Factory,	Additional egress.	
W. F. Evans' Factory,	Additional egress.	

TOWN OF HINGHAM.

Name of Building.	Orders given.	Compliances.
High School, ...	Better ventilation.	Complied.

TOWN OF HOLBROOK.

Name of Building.	Orders given.	Compliances.
Sumner School-house, . .	Provide ventilation.	Complied.

TOWN OF HOLLISTON.

Name of Building.	Orders given.	Compliances.
High School-house, . . .	Better ventilation ; doors changed.	Partly complied.
No. 4 School-house, . . .	Better ventilation.	
No. 8 School-house, . . .	Better ventilation.	

CITY OF HOLYOKE.

Name of Building.	Orders given.	Compliances.
Wolcott's Block, ...	Additional means of egress, and extinguishing fire.	Complied.
Park Street School, . . .	Better ventilation, and sanitary provisions.	*–
North Chestnut Street School, .	Better ventilation, and sanitary provisions.	Complied.
Octo's Block, 95 Jackson Street,	Additional means of egress, and extinguishing fire.	Complied.
Octo's Block, corner Maple and Jackson streets.	Additional means of egress, and extinguishing fire.	Complied.
Octo's Block, Maple Street, .	Additional means of egress, and extinguishing fire.	Complied.
Hibernian Hall, ...	Additional means of egress, and extinguishing fire.	Complied.
Pierce's Block, ...	Additional means of egress.	Complied.
Zelin's Block, ...	Additional means of egress.	Complied.
J. Smith's Block, . . .	No order given.	
Shelly's Block, 195 Lyman Street,	Additional means of egress, and extinguishing fire.	Complied.
Shelly's Block, 101 Lyman Street.	Additional means of egress, and extinguishing fire.	Complied.
Shelly's Block, 41 Chestnut Street,	Additional means of egress, and extinguishing fire.	Complied.
Stratton's Block, . . .	Additional means of egress, and extinguishing fire.	Complied.
M. M. Mitiver's Block, . .	Additional means of egress, and extinguishing fire.	In process of construction.

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* City is having plans prepared for ventilating and heating.

CITY OF HOLYOKE — Concluded.

Name of Building.	Orders given.	Compliances.
Beauchemin's Block, . . .	Additional means of egress, and extinguishing fire.	Complied.
Vincent Block, ...	No order given.	
Haywood's Block, . . .	No order given.	
Smith's Block, ...	Additional means of egress.	
Manning's Block, . . .	No order given.	
Leandy's Block, ...	No order given.	
J. Prew's Block, ...	No order given.	
N. J. O'Connell's Block, . .	Additional means of egress, and extinguishing fire.	In process of construction.
Dowdell's Block, . . .	Additional means of egress, and extinguishing fire.	
J. Wright's Block, . . .	No order given.	
Carignon's Block, . . .	No order given.	

TOWN OF HOPEDALE.

Hopedale House, . . .	Fire-escapes, means of extinguishing fire.	Complied.
Elastic Fabric Boarding-house, .	Fire-escapes, means of extinguishing fire.	Complied.
Harrison Block, ...	Fire-escape, means of extinguishing fire.	Complied.

TOWN OF HOPKINTON.

1st District, Grades 1 and 2 School-houses.	Better ventilation.	Complied.
1st District, Grade 1 School-house.	Better ventilation.	Complied.
A. Coburn & Son's Factory, .	Fire-escapes.	

TOWN OF HUDSON.

Valley House, ...	Fire-escape.	Order recently given.
Hudson House, ...	– –	
Mansion House, ...	Portable fire-escapes.	
Lewis Block, ...	– –	
Dearborn's Block, . . .	– –	

TOWN OF HUDSON — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Jefts' Block, ...	Fire-escape.	Complied.
Pythian Hall, ...	Doors open out.	Complied.
Hibernian Hall, ...	Fire-escape.	Complied.
G. A. R. Hall, ...	Fire-escape.	Complied.
Masonic Hall, ...	Improve egress.	
Town Hall, ...	– –	
Bradley & Sayward's Factory, .	Fire-escape.	Complied.
F. H. Chamberlain's Factory, .	Fire-escape.	Complied.
C. Brigham's Factory, No. 1, .	Fire-escape.	Complied.
C. Brigham's Factory, No. 2, .	Fire-escape.	Complied.
Dunn, Green & Co.'s Factory, .	Fire-escape.	Complied.
Methodist Church, . . .	Sanitary changes.	Complied.
Baptist Church, ...	– –	
Unitarian Church, . . .	– –	
High Street School, . . .	Provide ventilation.	*–
High School-house, . . .	Provide ventilation.	†–
School Street School-house, .	Provide ventilation.	
Grove Street School-house, .	Provide ventilation.	
Green Street School-house, .	Provide ventilation.	
Broad Street School-house, .	Provide ventilation.	

TOWN OF HUNTINGTON.

Village Grammar School, . .	Better ventilation, and sanitary provisions.	‡–

TOWN OF HYDE PARK.

Everett House, ...	Additional egress.	Complied.
125 River Street, ...	Fire-escape.	Complied.
Odd Fellows' Hall, ...	Fire-escape.	Order recently given.

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* Building completely renovated; new sanitaries put in, also new furnaces and a system of ventilation.

† Special committee to report at next annual meeting what additional accommodations for school purposes are required, — with a view of consolidating some of the schools.

Partially complied; now in process of improvement.

TOWN OF KINGSTON.

Name of Building.	Orders given.	Compliances.
High School, ...	Better ventilation.	Not completed.

TOWN OF LANESBOROUGH.

Name of Building.	Orders given.	Compliances.
Berkshire School, . . .	Sanitary and ventilation.	Improved.

CITY OF LAWRENCE.

Name of Building.	Orders given.	Compliances.
Oliver School, ...	Additional egress; better ventilation and sanitary.	Complied in part.
City Hall, ...	No order.	
Washington School, . . .	Remove paper in cellar.	Complied.
Park Street School, . . .	Additional ventilation.	
Park Street School Annex, .	Remove seats from; additional ventilation.	Vacated.
Hotel Brunswick, . . .	Portable fire-escape; means for extinguishing fire.	Complied.
Central House, ...	Portable fire-escapes; means for extinguishing fire.	Complied.
Broadway Hotel, . . .	Portable fire-escape; means for extinguishing fire.	Complied.
Essex House, ...	Portable fire-escapes; means for extinguishing fire.	Complied.
Franklin House, ...	Red lights, notices, gongs; means for extinguishing fire.	Complied.
New England House, . . .	Portable means for extinguishing fire.	Complied.
Revere House, ...	Portable fire-escapes; means for extinguishing fire.	Complied.
Knox Block, ...	Portable fire-escapes; means for extinguishing fire.	Complied.
American House, . . .	Portable fire-escape; means for extinguishing fire.	Complied.
Knights of Honor Hall, . .	Means for extinguishing fire.	Complied.
Franklin Hall, ...	Means for extinguishing fire.	Complied.
Sargent's Block, ...	Portable fire-escapes.	Complied.
Oswald's Block, ...	Remove obstructions from corridor; portable means for extinguishing fire.	Complied.
Jones' Hotel, ...	Portable fire-escape; fire-escape.	Complied.

CITY OF LAWRENCE — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Dodge's Hotel, ...	Portable fire-escapes; means for extinguishing fire.	Complied.
Odd Fellows' Hall, . . .	Additional egress.	Complied.
Atlantic Mill, No. 1, . . .	No order.	
Atlantic Mill, No. 2, . . .	No order.	
Atlantic Mill, No. 3, . . .	No order.	
Washington Mill, No. 1, . .	No order.	
Washington Mill, No. 2, . .	No order.	
Washington Mill, No. 3, . .	No order.	
Washington Mill, No. 4, . .	No order.	
Saunders' Block, . . .	Means for extinguishing fire; additional egress.	Complied.
Sweeney's Block, . . .	Additional egress.	Complied.

TOWN OF LEE.

Center School, ...	Sanitary and ventilation.	In process.
High School, ...	Sanitary and ventilation.	
South Lee School, . . .	Advised new building.	Concurred.
Memorial Hall, ...	Fire-escape; swing doors out.	Complied.
Hall's Building, ...	Fire-escape.	Complied.
Baird & Benton Block, . .	Fire-escape.	Complied.
Northrop Block, ...	Extend fire-escape to ground.	Complied.

TOWN OF LENOX.

High School, ...	Sanitary and ventilation.	
Lenox Dale School, . . .	Sanitary and ventilation.	
Bellevue House, ...	Fire-escapes.	Complied.
Trinity Church, ...	None.	

TOWN OF LEXINGTON.

Norris Block, ...	Fire-escape.	Complied.

TOWN OF LONGMEADOW.

Name of Building.	Orders given.	Compliances.
No. 2 School, W. Longmeadow,	No order given.	
Center School, W. Longmeadow,	No order given.	
Center School, E. Longmeadow,	Better ventilation.	Complied.

CITY OF LOWELL.

Richardson's Hotel, . . .	Fire-escapes.	Complied.
Opera House, ...	Fire-proof curtain.	Complied.
St. Charles Hotel, . . .	Fire-escapes.	Complied.
G. A. R. Hall, Post 120, . .	Fire-escape.	Complied.
Unitarian Church, . . .	Fire-escape.	Complied.
Novelty Suspender Company, .	Fire-escape.	Complied.
W. L. Davis Factory, . . .	Fire-escape.	Complied.
Pilgrim Hall, ...	Fire-escape.	Complied.
S. K. Dexter's Block, . . .	Fire-escape.	Complied.
Buckley's Boarding-house, . .	Fire-escapes.	Complied.
Pythian Hall, ...	Fire-escape.	Complied.
Mathew Temperance Hall, . .	Fire-escape.	Complied.
Unity Hall, ...	Fire-escape.	Complied.
Hibernian Hall, . .	Fire-escape.	Complied.
Lynch's Hall, ...	Fire-escape.	
J. M. Stover Factory, . .	- -	
Fellows Building, . . .	Fire-escapes.	Complied.
St. Joseph's Block, . . .	Fire-escape.	Complied.
American House, . . .	Larger alarm gong.	Complied.
Spalding's Block, . . .	Additional fire-escapes.	Being complied with.
Marston's Block, . . .	Better access to rear stairway on top floor.	Complied.
Stott's Block, ...	Fire-escape.	Complied.
Farragut House, . . .	Fire-escapes.	Being complied with.

TOWN OF MALDEN.

Name of Building.	Orders given.	Compliances.
Judson School, ...	Better ventilation.	Complied.
Barrett's Opera House, . .	Better egress.	Complied.
Odd Fellows' Hall, . . .	Better egress.	Complied.
Masonic Hall, ...	Fire-escape.	Complied.
Y. M. C. A. Hall, . . .	Fire-escape.	Complied.
Wiggin & Stevens' Factory, .	Fire-escape.	Complied.
Howard House, ...	Fire-escape.	Complied.
T. M. Kaulback, ...	Fire-escape.	Partly complied.
Canton Hall, ...	Fire-escape.	Partly complied.
Sarah E. Reagh's Tenement-house.	Fire-escape.	

TOWN OF MANSFIELD.

Central School-house, . .	Better ventilation.	*–
Central House, ...	Portable escapes.	Recent order.
Mansfield House, . . .	Fire-escape.	Recent order.

TOWN OF MARION.

South School, ...	To improve sanitary arrangements.	Complied.
Centre School, ...	Better ventilation.	Complied.

TOWN OF MARLBOROUGH.

M. Burkes' Building, . . .	Fire-escape; means of extinguishing fire.	Complied.
Weeks' Building, . . .	Fire-escape; means of extinguishing fire; change doors.	Complied.
Bigelow School-house, . .	Better ventilation.	Complied.
Hildreth School-house, . .	Better ventilation.	
Washington School-house, . .	Better ventilation.	
Pleasant Street School-house, .	Better ventilation.	

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* To be reported upon at next town meeting.

TOWN OF MARLBOROUGH — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
A. O. H. Hall,	Fire-escape; means of extinguishing fire.	In process.
Liberty Block,	Fire-escape; means of extinguishing fire; door put in; remove combustible material.	Complied.
Pythian Hall,	Means of extinguishing fire.	Complied
Gleason House,	Fire-escapes; means of extinguishing fire.	In process.
West House,	Fire-escapes; means of extinguishing fire.	Complied.
Greene's Block,	Fire-escapes; means of extinguishing fire.	Complied.
Feeley House,	No orders.	
Hazelton Block,	Fire-escape; doors open out; means of extinguishing fire.	In process.
Brown's Block,	Better means of egress; means of extinguishing fire.	In process.
Franklin Block,	Means of extinguishing fire.	In process.
O'Grady's Block,	Better egress; means of extinguishing fire.	In part.
Burke's Building, 93 Main street,	Means of extinguishing fire.	Complied,
Marlboro' Block,	No orders.	
Richileau Block,	Fire-escape.	In process.
Middlesex Factory,	Fire-escapes.	In process.
Windsor House,	Fire-escapes; doors put in, and swing out; means of extinguishing fire; electric gong; discontinue the use of attic sleeping rooms; red lights; notices in sleeping rooms; watchman.	Complied in part, and in process.
Sasseville Block,	Fire-escape.	Complied.
Beaudreau Block,	Fire-escape.	Complied.

TOWN OF MAYNARD.

NAME OF BUILDING.	Orders given.	Compliances.
Masonic Hall,	Fire-escape.	Complied.
Co-operative Hall,	Fire-escape.	Complied.
Odd Fellows' Hall,	Fire-escape.	Complied.
Music Hall,	– –	
Methodist Building,	Fire-escape.	Third floor vacated.
Maynard Hotel,	Portable fire-escapes.	Complied.

TOWN OF MAYNARD — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Garfield School-house,	Provide ventilation.	*—
Main Street School-house,	Provide ventilation.	
Acton Street School-house,	Provide ventilation.	
Austin Street School-house,	Provide ventilation.	

TOWN OF MEDFORD.

Town Almshouse,	Fire-escape.	Complied.
Brooks School,	Better ventilation.	Complied.
G. S. Deland's Factory,	Fire-escape.	Partly complied.
Armory Hall,	Fire-escape.	Complied.
Legion of Honor Hall,	Fire-escape.	Complied.
Masonic Hall,	Fire-escape.	

TOWN OF MEDWAY.

Quinobequin House,	Fire-escape; doors put in; means of extinguishing fire.	Complied.
Hotel Grant,	Means of extinguishing fire.	Complied.
Sanford Hall,	Means of extinguishing fire.	Complied.
School-house No. 1,	Better ventilation; doors open out.	Doors open out.
G. A. R. Hall,	Fire-escape; door put in; means of extinguishing fire; combustible material removed.	In part.
Fuller's Hall,	Door open out.	Complied.
Odd Fellows' Hall,	No orders.	

TOWN OF MELROSE.

Franklin School,	Better ventilation.	
Eastman's Block,	Fire-escape.	Complied.

TOWN OF MENDON.

Town Hall and School Building,	Better ventilation.	

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* Special committee now considering what additional school accommodations are required, with a view of consolidating the pupils in a new building. Will report to the town at the next annual town meeting.

TOWN OF MERRIMAC.

Name of Building.	Orders given.	Compliances.
Odd Fellows' Hall,	Means for extinguishing fire.	Complied.
Monomack Hall,	No order.	
Centre School,	Additional ventilation.	Complied in part.
Middle Street School,	No order.	

TOWN OF METHUEN.

Name of Building.	Orders given.	Compliances.
Dodge's Block,	Additional egress.	Complied.
Currier's Block,	Additional egress.	Complied.
Town Hall,	Additional egress.	Complied.
High School,	Additional egress; means for extinguishing fire.	Complied.

TOWN OF MIDDLEBOROUGH.

Name of Building.	Orders given.	Compliances.
Leonard & Barrows Shoe Factory,	Fire-escape.	Complied.
School Street School,	Better ventilation.	Complied.
Odd Fellows' Hall,	Fire-escape.	In process of construction.

TOWN OF MIDDLEFIELD.

Name of Building.	Orders given.	Compliances.
Factory Village School,	No order given.	
Center School,	No order given.	
Bancroft School,	Better ventilation, and sanitary provisions.	Complied.

TOWN OF MILFORD.

Name of Building.	Orders given.	Compliances.
Park School-house,	Better ventilation.	Complied.
South Grammar School-house,	Better ventilation.	Complied.
Town Hall,	Rear doors changed.	Complied.
Pythian Hall,	Fire-escape; means of extinguishing fire; doors open out.	Complied.
Exchange Block,	Fire-escape; means of extinguishing fire; doors open out.	Complied.

TOWN OF MILFORD — Concluded.

Name of Building.	Orders given.	Compliances.
Church's Block, ...	Better egress; means of extinguishing fire; combustible material removed.	Complied.
Sheehan's Building, . . .	Fire-escape; means of extinguishing fire.	Complied.
Grant Block, ...	Fire-escape; means of extinguishing fire.	Complied.
Mansion House, ...	Fire-escape; means of extinguishing fire; electric gong; notices in sleeping rooms; watchman.	In process.
Milford Hotel, ...	Fire-escape; means of extinguishing fire.	

TOWN OF MILLIS.

Adams School-house, . .	Better ventilation.	Complied.
Partridge Hall, ...	Better egress.	Complied.

TOWN OF MONSON.

No. 1 School, ...	Better ventilation, and sanitary provisions.	*–
No. 5 School, ...	Better ventilation, and sanitary provisions.	
No. 8 School, ...	Better ventilation, and sanitary provisions.	

TOWN OF MONTAGUE.

Oakman School, ...	Sanitary and ventilation.	Complied.
Eighth Street School, . . .	Sanitary and ventilation.	Complied.
Millers Falls School, . . .	Sanitary and ventilation.	Complied.
Crocker Institute of Savings, .	Swing doors out; fire-pails.	Complied.

TOWN OF MONTEREY.

Village School, ...	Sanitary and ventilation.	Complied.

TOWN OF NANTUCKET.

Surfside Hotel, ...	Fire-escape.	

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* Claimed that they could not get the work done.

TOWN OF NATICK.

NAME OF BUILDING.	Orders given.	Compliances.
Center School-house,	Better ventilation.	Complied.
Pond Street School-house,	Better ventilation; better egress; fire-stops; remove combustible material.	
Eagle Block,	Portable fire-escapes; better egress; means of extinguishing fire.	Complied.
Winch's Block,	Fire-escape; doors put in, and open out; means of extinguishing fire.	*–
Rice's Block,	Fire-escapes; doors open out; steam pipes protected; means of extinguishing fire.	Complied.
Morse's Block,	Fire-escapes; doors open out; doors put in; means of extinguishing fire.	Complied in part.
Woodbury's Block,	Additional egress; means of extinguishing fire.	Complied.
Cochituate House,	Fire-escapes; means of extinguishing fire.	Complied.
Wilson House,	Fire-escapes; means of extinguishing fire.	Complied.
Club Room, Electric Light Building.	Protection around steam pipes.	Vacated.

TOWN OF NEEDHAM.

Kimball School-house,	Better ventilation.	
Moseley Block,	No orders.	
Highland House,	Fire-escapes; means of extinguishing fire.	Complied in part.

CITY OF NEW BEDFORD.

New Bedford Casket Company,	Outside doors not to be locked.	Complied.
Pairpont Manufactory,	Additional egress.	Complied.
Parker House,	Electric gong; post notices.	Complied.
Parker House,	Portable escapes.	Complied.
Mansion House,	Portable escapes.	Complied.
China Hall,	Fire-escape.	
Tenement-house,	Fire-escape.	Complied.
Tenement-house,	Fire-escape.	Complied.

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* Complied in part; owner prosecuted.

CITY OF NEW BEDFORD — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Tenement-house, ...	Better egress.	Complied.
Tenement-house, ...	Fire-escape.	
Lewis Building, ...	Doors to swing out.	Complied.
Fourth Street School-house, .	Better ventilation.	Not completed.
New Bedford Cordage Manufactory.	Fire-escape.	Complied.

TOWN OF NEWBURY.

NAME OF BUILDING.	Orders given.	Compliances.
Plum Island Hotel, . . .	No order.	
Depot School, ...	Additional ventilation.	Complied in part.

CITY OF NEWBURYPORT.

NAME OF BUILDING.	Orders given.	Compliances.
City Hall, ...	Fire-proof curtain.	Complied.
Temple Street School, . . .	No order.	
Bromfield Street School, . .	No order.	
Kelley School, ...	Improve the sanitaries; additional ventilation.	
Hancock School, ...	Additional ventilation.	
Webster House, ...	Portable fire-escape; means for extinguishing fire.	Complied.
Wolf Tavern, ...	Watchman; notices; gong; portable fire-escapes; means for extinguishing fire.	Complied.
Fowler House, ...	Portable extinguisher; portable fire-escapes.	Complied.
City Hotel, ...	Portable fire-escape; means for extinguishing fire.	Complied.
Hancock House, ...	Remove combustible matter; means for extinguishing fire.	Complied.
Odd Fellows' Hall, ...	Means for extinguishing fire.	Complied.
G. A. R. Hall, ...	Additional egress; swing doors out; means for extinguishing fire.	Complied in part.

CITY OF NEWBURYPORT — Concluded.

Name of Building.	Orders given.	Compliances.
Masonic Hall,	Remove combustible material; means for extinguishing fire.	Complied.
Masonic Hall, State Street,	Fire-escape; means for extinguishing fire.	Complied.
Washington Hall,	Additional egress.	Complied.
O. U. A. M. Hall,	No order.	
Phœnix Hall,	Additional egress; means for extinguishing fire.	Complied.
Lyncoln Hall,	Additional egress; means for extinguishing fire.	Complied.
Adams House,	Portable fire-escape; means for extinguishing fire.	Complied.
Electric Light Building,	Fire-escape.	Complied.
Peabody Mill,	Fire-escapes; windows to fire-escape free of obstruction.	Complied.
Victory Mill,	Keep windows at fire-escape free from obstruction.	Complied.
E. P. Dodge Manufacturing Company.	Doors to swing out, in tower.	Complied.
E. P. Dodge Manufacturing Company, Box Shop.	Fire-escape.	Complied.
Nathan D. Dodge's Factory,	No order.	
Towle Manufacturing Company,	No order.	
A. F. Towle & Son's Factory,	No order.	
Dodge Bros.' Factory,	No order.	
Hoag & Durgin's Factory,	Fire-escapes.	Complied.

TOWN OF NEW MARLBOROUGH.

South Berkshire House,	Lights in halls; fire pails.	Complied.
Center School,	Sanitary and ventilation.	In process.
Mill River School,	Sanitary and ventilation.	In process.

TOWN OF NEW SALEM.

New Salem Academy,	Sanitary and ventilation.	Improved.
Academy Dormitory,	None.	

CITY OF NEWTON.

Name of Building.	Orders given.	Compliances.
Lasell Seminary,	– –	
Woodland Park Hotel,	– –	
Eagle Block,	– –	
Bacon Block,	– –	
Nonantum Block,	– –	
Beal's Block,	Portable fire-escape.	
Tremont Hall,	Improve egress.	*–
Borden Hall,	Provide water-closets.	Complied.
Walker Home,	Portable fire-escapes.	
Baptist Missionary Home,	Portable fire-escapes.	

TOWN OF NORTH ADAMS.

Veasie Street School,	Sanitary and ventilation.	
Union Street School,	Sanitary and ventilation.	
Blackinton School,	Sanitary and ventilation.	Complied.
Braytonville School,	Sanitary and ventilation.	Improved.
Boland Block,	Portable means for extinguishing fire.	Complied.
Burlengane Block,	Extend fire-escape to ground.	Complied.
The Wilson,	Red lights; notices and gongs.	Complied.
Richmond House,	Red lights and notices.	Complied.
Mansion House,	Fire pails.	Complied.

CITY OF NORTHAMPTON.

Prospect Street School,	Better ventilation, and sanitary provisions.	†–
King Street South School,	Better ventilation, and sanitary provisions.	
Williams Street School,	Better ventilation, and sanitary provisions.	Partly complied with.
Leeds Primary School,	No order given.	
Union Block,	No order given.	
Warner's Hall, Leeds,	Additional means of egress.	Complied.

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* Building to be remodelled.

† A new building is to be erected, to take the place of Prospect and King Street schools, with modern improvements.

TOWN OF NORTH ANDOVER.

Name of Building.	Orders given.	Compliances.
Farnum School,	No order.	
Kimball School,	No order.	
Centre School,	No order.	
Town Hall,	Swing doors out; means for extinguishing fire.	Complied.
Odd Fellows' Hall,	Additional egress; means for extinguishing fire.	Complied.
Merrimack School,	Additional ventilation.	Complied in part.

TOWN OF GEORGETOWN.

Name of Building.	Orders given.	Compliances.
Little Block,	No order.	
Odd Fellows' Hall,	Means for extinguishing fire.	Complied.
Brick Grammar School,	Better ventilation.	

TOWN OF NORTH ATTLEBOROUGH.

Name of Building.	Orders given.	Compliances.
Tenement-house,	Fire-escape.	Complied.
High School-house,	Better ventilation.	*–
International House,	Means of extinguishing fire.	Complied.
Barrows' Block,	Fire-escape.	Complied.
Gould's Block,	Fire-escape.	Complied.

TOWN OF NORTHFIELD.

Name of Building.	Orders given.	Compliances.
Village School,	Sanitary and ventilation.	Improved.

TOWN OF NORWELL.

Name of Building.	Orders given.	Compliances.
Grose & Son's Shoe Factory,	Fire-escape.	Complied.
Litchfield's Shoe Factory,	Fire-escape.	Complied.

TOWN OF NORWOOD.

Name of Building.	Orders given.	Compliances.
New York & New England Shop,	Provide ventilation.	

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* To be complied with during winter vacation.

TOWN OF ORANGE.

Name of Building.	Orders given.	Compliances.
High School,	Sanitary and ventilation.	
Myrtle Street School,	Sanitary and ventilation.	
North School,	Sanitary and ventilation.	

TOWN OF ORLEANS.

Shattuck House,	Portable escapes.	Complied.
Steele House,	Portable escapes.	Recent order.

TOWN OF PALMER.

Bondville School Building,	Better ventilation, and sanitary provisions.	*–
Three Rivers School Building,	Better ventilation, and sanitary provisions.	
High School Building,	No order given.	

TOWN OF PEPPERELL.

Lawrence Hall,	Fire-escape.	
Odd Fellows' Hall,	Fire-escape.	Complied.
Leighton Bros.' Factory,	Fire-escape.	Complied.
Depot School,	Better ventilation.	
High School,	Changes in ventilation.	Partly complied.

CITY OF PITTSFIELD.

Centre School,	Sanitary and ventilation.	Complied.
Training School,	Sanitary and ventilation.	
North Grammar School,	Sanitary and ventilation.	
High School,	Sanitary and ventilation.	Complied.
High School,	Enclosed fire-escape.	Complied.
Central Block,	Fire-escapes	In process.
Sprague Brimmer Mill,	None.	

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* Are erecting new building, with all modern improvements.

CITY OF PITTSFIELD — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Gamwell Block, ...	Fire-escape.	In process.
Russell's Mill, ...	None.	
Bel Air Mill, ...	None.	
American House, . . .	Red lights; notices; gongs.	Complied.
American House, . . .	Fire pails.	Complied.
Burbank Hotel, ...	Red lights; notices; gongs.	Complied.
Burbank Hotel, ...	Fire pails.	Complied.
Berkshire House, . . .	Fire pails.	Complied.
Pontoosac Mill, ...	None.	

TOWN OF PLYMOUTH.

Old Colony Duck Company's Factory.	Fire-escape.	Complied.

TOWN OF PROVINCETOWN.

Western School-house, . .	Better ventilation.	
Pilgrim House, ...	Portable escapes.	Recent order.
Central House, ...	Portable escapes.	Recent order.
Atlantic House, ...	Portable escapes.	Recent order.

TOWN OF RANDOLPH.

Stetson School, ...	Provide ventilation.	Complied.
Prescott School-house, . .	Provide ventilation.	
Jones' Hall, ...	Fire-escape.	Complied.
Odd Fellows' Hall, . . .	Fire-escape.	Complied.

TOWN OF READING.

John Street Grammar School, .	Better ventilation.	
C. E. Damon & Company's Factory.	Fire-escape.	Complied.

TOWN OF ROCKLAND.

Name of Building.	Orders given.	Compliances.
Wright & Richards' Shoe Factory.	Fire-escape.	Complied.
Burrill & Houghton's Shoe Factory.	Fire-escape.	Complied.
Harwell's Shoe Factory,	Fire-escape.	
Odd Fellows' Hall,	Fire-escape.	
Temperance Hall,	Fire-escape.	Complied.
Grand Army Hall,	Fire-escape.	Burned July 15, 1890.
Channing Hall,	Fire-escape.	Made into offices.
Phœnix Opera House,	Fire-escape and widen doors.	Complied.

TOWN OF ROCKPORT.

Abbott House,	Means for extinguishing fire; portable fire-escapes.	Complied.
Ocean View House,	No order.	
Pegron Cove House,	No order.	
Turk's Head Inn,	Red light; watchman; notices; gongs; portable fire-escapes.	Complied.

TOWN OF ROWLEY.

Centre Grammar School,	Additional ventilation.	Complied in part.
East End School,	No order.	
Town Hall,	No order.	

TOWN OF SALISBURY.

Cushing School,	Swing doors out.	Complied.
Pike School,	Additional ventilation.	Complied.
March School,	Additional ventilation.	Complied.
True School,	No order.	

TOWN OF SANDISFIELD.

New Boston School,	Sanitary and ventilation.	Improved.

TOWN OF SANDWICH.

Name of Building.	Orders given.	Compliances.
School Street School-house,	Better ventilation.	

TOWN OF SCITUATE.

High School and Town Hall,	Doors to open out.	Complied.
East Grammar School,	Better ventilation.	Complied.

TOWN OF SHARON.

Centre School-house,	Provide ventilation.	*
High School-house,	Provide ventilation.	

TOWN OF SHEFFIELD.

Nos. 6 and 13 Schools,	Sanitary and ventilation.	Complied.

TOWN OF SHIRLEY.

Shirley Grammar School,	Better ventilation.	Complied.
Phenix Boarding House,	Fire-escapes.	Complied.
Fredonia Mills,	Fire-escape.	Complied.
Hotel Davis,	Fire-escape.	Complied.

TOWN OF SOMERSET.

School Street School-house,	Better ventilation.	Not completed.

CITY OF SOMERVILLE.

Odd Fellows' Hall, East Somerville.	Fire-escape.	Complied.
C. W. Lyman's Factory,	Fire-escapes.	

TOWN OF SOUTHBOROUGH.

Center School-house,	Better ventilation.	Complied.
Peters' High School-house,	Better ventilation.	
Fay Boarding School,	Fire-escape; means of extinguishing fire.	In process.

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* Special committee to report, at next town meeting, plans for a new school-house.

TOWN OF SOUTHBOROUGH — Concluded.

Name of Building.	Orders given.	Compliances.
Masonic Hall,	Fire-escape.	
Good Templars' Hall,	Better egress.	
Town Hall,	Doors open out; obstructions in rear entry removed.	Complied in part.
St. Mark's School,	Fire-escape from hospital and principal's room.	Complied.

CITY OF SPRINGFIELD.

Name of Building.	Orders given.	Compliances.
East Union Street School,	Remove all unnecessary woodwork and combustible material from the basement, and make the same as fire and smoke proof as possible, with metal lath and adamant mortar, with additional stairs on north side.	Complied.
Oak Street School,	Remove all unnecessary woodwork and combustible material from the basement, and make the same as fire and smoke proof as possible, with metal lath and adamant mortar.	Complied.
Worthington Street School,	Remove all unnecessary woodwork and combustible material from the basement, and make the same as fire and smoke proof as possible, with metal lath and adamant mortar.	Complied.
Central Street School,	Remove all unnecessary woodwork and combustible material from the basement, and make the same as fire and smoke proof as possible, with metal lath and adamant mortar.	Complied.
York Street School,	Remove all unnecessary woodwork and combustible material from the basement, and make the same as fire and smoke proof as possible, with metal lath and adamant mortar.	Complied.
Brightwood School,	Remove all unnecessary woodwork and combustible material from the basement, and make the same as fire and smoke proof as possible, with metal lath and adamant mortar.	Complied.
Parker Street School,	Remove all unnecessary woodwork and combustible material from the basement, and make the same as fire and smoke proof as possible, with metal lath and adamant mortar.	Complied.

CITY OF SPRINGFIELD — Concluded.

Name of Building.	Orders given.	Compliances.
Hooker School,	Remove all unnecessary woodwork and combustible material from the basement, and make the same as fire and smoke proof as possible, with metal lath and adamant mortar.	Complied.
High School,	Better ventilation, and sanitary provisions.	*–
High School,	Remove all unnecessary woodwork and other combustible material from the basement, and make the same as fire and smoke proof as possible, with metal lath and adamant mortar; also cut two additional doors for rear entrance.	Complied.
Elm Street School,	Better ventilation, and sanitary provisions; remove all unnecessary woodwork and other combustible material from the basement, and erect a tower stairway on each end of the building.	Complied.
West Union Street School,	Remove all unnecessary woodwork and other combustible material from the basement, and make the same as fire and smoke proof as possible, with metal lath and adamant mortar.	Complied.
H. W. Pearl's Block,	Additional means of egress.	Complied.
Dickinson's Block,	No order given.	
Doolan's Block,	Additional means of egress.	†–
P. J. O'Connell's Block,	Additional means of egress.	‡–
P. P. Emery & Co.'s Block,	No order given.	

TOWN OF STOCKBRIDGE.

High School,	Sanitary and ventilation.	Complied.
Curtisville School,	Sanitary and ventilation.	Complied.
Dunham Block,	Portable fire-escape; fire pails.	Complied.

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* Partially complied; now in process of improvement.

† Employees were all removed to second story.

‡ In process of construction.

TOWN OF STONEHAM.

Name of Building.	Orders given.	Compliances.
Good Templars' Hall,	Escape from fire.	Complied.
Red Men's Hall,	Escape from fire.	Complied.
Mission Hall,	Fire-escape.	Complied.
Temple of Honor Hall,	Fire-escape.	Complied.
M. H. Fitzgerald's Factory,	Fire-escape.	Complied.
Hibernian Hall,	Fire-escape.	Complied.
Keene & Jones Bros.' Factory,	Fire-escape.	Complied.
E. F. Saurin Hall,	Fire-escape.	Complied.
Sanborn & Mann,	Additional stairway.	Complied.
Central House,	Fire-escapes.	

TOWN OF STOUGHTON.

Darlings' Block,	Fire-escape.	Complied.
Atwoods' Block,	Fire-escape.	Complied.
Swans' Block,	Fire-escape.	Complied.
Whites' Block,	– –	Hall abandoned.
Drake School-house,	– –	*–

TOWN OF STOW.

High School-house,	Provide ventilation.	Complied.
Rock Bottom School-house,	Provide ventilation.	Complied.

TOWN OF SUDBURY.

Centre School-house,	Provide ventilation.	†–

TOWN OF SUNDERLAND.

Town Hall and School,	Sanitary and ventilation.	

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* New building to take place of old.

† Old house abandoned; new four-room building erected, with modern appliances, adopted for health and comfort of pupils.

CITY OF TAUNTON.

Name of Building.	Orders given.	Compliances.
City Hotel,	Fire-escape; electric gong; post notices.	Complied.
West Silver Company Manufactory.	Fire-escape.	Now being complied.
Hotel Bristol,	Means of extinguishing fire; portable escapes.	Complied.
White's Block,	Additional egress.	Complied.
Tenement-house,	Additional egress.	
Crandell's Block,	Fire-escape.	Complied.
Staple's Block,	Better egress and fire-escape.	Complied.
Central House,	Fire-escape.	Complied.
City Hotel,	Portable escapes.	Recent order.
Taunton House,	Fire-escape.	Complied.
Massasoit House,	Fire-escape.	Complied.
Hewitt Shoe Manufactory,	Fire-escape.	Complied.
School Street School-house,	Better ventilation.	
Pine Street School-house,	Better ventilation.	

TOWN OF TOWNSEND.

Centre School,	Better ventilation.	Partly complied.
Railroad House,	Fire-escapes.	
Old Brick Church,	– –	

TOWN OF TYRINGHAM.

Village School,	Sanitary and ventilation.	

TOWN OF WAKEFIELD.

G. A. R. Hall,	Fire-escape.	
Kingman's Hall,	Fire-escape.	Complied.
Odd Fellows' Hall,	Fire-escape.	Complied.

TOWN OF WALPOLE.

Centre School-house,	Provide ventilation.	Complied.
Truant School,	– –	

CITY OF WALTHAM.

Name of Building.	Orders given.	Compliances.
High Street School-house, . .	Additional stairway, and change ventilating system to avoid wood flues.	Complied.
Sheppard's Hall, ...	Doors to open out.	Complied.
Masonic Hall, ...	Fire-escape.	Complied.
McGurns' Block, . . .	Fire-escape.	*–
Parmenter Block, . . .	– –	
Bank Building, ...	– –	
Adams House, ...	– –	
Shawmut House, . . .	–	
Prospect House, ...	Fire-escapes.	†–
Central House, ...	Fire-escapes.	
New Church School-house, .	Improve ventilation.	
Boarding-house, ...	Fire-escapes.	
Hall's Block, ...	Fire-escape.	Complied.
Waverly Hall, ...	Fire-escape.	Complied.
Good Templars' Hall, . .	Fire-escape.	Complied.
Armory Hall, ...	Fire-escape.	Complied.
Priest Block, ...	Fire-escape.	Complied.
Eagle Block, ...	Fire-escape.	Complied.
Central Block, ...	Fire-escape.	Complied.
Welch Block, ...	Fire-escape.	Complied.

TOWN OF WARE.

Name of Building.	Orders given.	Compliances.
School Street School Building, .	No order given.	
South Street School Building, .	No order given.	
West Street School Building, .	Better ventilation, and sanitary provisions.	
North Street School Building, .	Better ventilation, and sanitary provisions.	‡–
High School Building, . .	No order given.	
Sanford Block, ...	Additional means of egress, and means for extinguishing fire.	§–

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* Hall on top floor abandoned; now used for storage of furniture.

† Orders recently given.

‡ Complied with in part; is being improved.

§ In process of construction.

TOWN OF WAREHAM.

NAME OF BUILDING.	Orders given.	Compliances.
Webster Hall,	Additional stairway; doors to open out.	Complied.
East Tremont School,	Better ventilation.	Complied.
School No. 4,	Better ventilation.	*–

TOWN OF WATERTOWN.

Union Market Hotel,	– –	

TOWN OF WAYLAND.

High and Grammar School-house.	Provide ventilation.	†–
Co-operative Hall,	Fire-escape.	

TOWN OF WELLESLEY.

Shaw School-house,	Better ventilation and sanitary closets.	Complied.
Hunnewell School-house,	Better ventilation.	Complied in part.
North School-house,	No orders.	

TOWN OF WESTFIELD.

Silver Street School,	Better ventilation, and sanitary provisions.	Complied.
Franklin Street School,	Better ventilation, and sanitary provisions.	
Davis School,	Better ventilation, and sanitary provisions.	Complied.
State Normal Boarding-house,	Additional means of egress.	Complied.
Masonic Hall,	Additional means of egress.	Complied.
Lane & Loomis's Block,	Additional means of egress.	Complied.
Van Deusen's Block,	Additional means of egress.	Complied.
Parker's Block,	Additional means of egress.	Complied.
Westfield Power Company, South Block.	Additional means of egress.	Complied.

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* Not enforced, as a new high school has been built and ventilated.

† Complied; steam substituted for stove.

TOWN OF WESTFIELD — CONCLUDED.

NAME OF BUILDING.	Orders given.	Compliances.
Thayer's Block,	Additional means of egress.	Complied.
Provin's Block,	No order given.	
Westfield Power Company, Main Block.	No order given.	
Union House,	No order given.	
Opera House,	No order given.	
Gowdy's Block,	No order given.	

TOWN OF WESTFORD.

Forge Village School,	Better ventilation.	Complied.

TOWN OF WEST NEWBURY.

Noyes' Comb Factory,	No order.	
Chase's Comb Factory,	No order.	
West Newbury Grammar School,	Better ventilation.	
West Newbury High School,	No order.	

TOWN OF WESTON.

High and Grammar School-house.	Provide ventilation.	

TOWN OF WESTPORT.

Union School-house,	Better ventilation.	Not completed.

TOWN OF WEST SPRINGFIELD.

Park Street School,	No order given.	
Bridge Street School,	No order given.	
Meadow Street School,	Better ventilation, and sanitary provisions.	Complied.
Mittineague School,	Better ventilation, and sanitary provisions.	

TOWN OF WEYMOUTH.

Name of Building.	Orders given.	Compliances.
Strong & Carroll's Shoe Factory,	Fire-escape.	Complied.
Clapp's Shoe Factory, . .	Fire-escape.	Complied.
Athens School, ...	Better ventilation.	Complied.
Franklin School, ...	Better ventilation.	Complied.
Hunt School, ...	Tower stairway.	Complied.

TOWN OF WHATELY.

South Centre School, . . .	Sanitary and ventilation.	Improved.
North Centre School, . . .	Sanitary and ventilation.	Improved.

TOWN OF WHITMAN.

Smith & Stoughton's Shoe Factory.	Better way of egress.	Complied.
Commonwealth Shoe Factory, .	Fire-escape.	Complied.
Whicher's Shoe Factory, . .	Better way of egress.	

TOWN OF WILBRAHAM.

No. 8 School Building, . .	No order given.	

TOWN OF WILLIAMSBURG.

Haydenville Grammar School, .	Better ventilation, and sanitary provisions.	*–

TOWN OF WILLIAMSTOWN.

The Greylock, ...	None.	
Towrie Inn, ...	None.	

TOWN OF WINCHESTER.

Centre Grammar School, . .	Better ventilation.	Partly complied.
Chapin School, ...	Better ventilation.	
Gifford School, ...	Better ventilation.	Partly complied.

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* Town failed to appropriate.

TOWN OF WINTHROP.

Name of Building.	Orders given.	Compliances.
Town Hall,	Stairways to be kept free of obstructions, and combustible material removed from the basement.	Complied.

TOWN OF WOBURN.

Name of Building.	Orders given.	Compliances.
G. W. Nichols' Factory,	Fire-escape.	Complied.
G. R. Gage's Factory,	Fire-escape.	Complied.
Red Men's Hall,	Fire-escape.	
E. Rollins' Factory,	Fire-escape.	
W. E. Cummings' Factory,	Fire-escape.	Complied.
G. A. Simonds' Factory,	Fire-escape.	Complied.
High School,	Better ventilation.	
Union Street School,	Better ventilation.	Complied.

REPORTS OF INSPECTORS.

The following reports of the inspectors contain much valuable information relative to the operations of the industrial and inspection laws, which are especially entrusted to this department to enforce.

Inspector Eldridge reports : —

In making my report for the year now closing, I can add but little that is new to what is contained in my last report, regarding the results of my observations of the workings of the various factory inspection laws, and of my efforts toward their enforcement ; but, as one result of another year's service, I am of the opinion that, while factory inspection laws and factory inspectors will never cease to be required, there is a constant improvement in the observance of the statutes made and provided. Reference to other acts, orders added at the commencement of the year to the former assignment, will be found further on.

The law relating to child labor, I am satisfied, through careful observation and inspection, is each year being better observed, largely from the fact that the children themselves are becoming more and more aware of the necessity of providing a certificate when presenting themselves for employment.

The working of the evening school law is as satisfactory as can be expected, with its present wording ; but the clause, "providing such minor has been, since reaching the age of fourteen, for one year continuously a resident of a city or town," etc., has been practically ignored, and it has been required that all minors not able to read and write in the English language, and not exempted by other sections of the act, shall be, during the sessions of the evening schools, regular attendants thereof, as certified to by the teacher, as a condition of employment.

The provisions of chapter 74, relating to the hours of labor of women and minors, posting of time-tables, etc., I have found as a rule well carried out, having had but few complaints as to the working of overtime ; and, on investigation in most cases, I have found that the infraction of the law was more technical than actual. I have had occasion in several instances to impress upon parties having women and minors employed in two or more rooms, the fact that the law requires the posting of time-tables in every such room, and that the placing of one such notice in the passageway leading to the several rooms is not in conformity with the statutes. I have learned of no instance of a disregard of chapter

215, relating to the securing uniform meal hours for children, young persons and women.

A glance at the tabulated report will show that an inspector's work is never complete, especially in the matter of the guarding of machinery, openings of hoistways, hatchways, elevators, etc. Safeguards ordered at one visit, and provided, at the next are found broken or out of place; and in many instances employers and owners of machines, although well aware that guards are necessary, and will be required by the inspector, neglect to provide them until directed to do so by the inspector. A marked change has taken place during the past few years in the practice of the manufacturers of machinery, a very large portion of their product having the dangerous parts covered before delivery.

I have found no instance of the locking of doors of factories and workshops in such manner as to prevent free egress. I have in but few instances ordered connection by means of wires attached to bells or gongs in engine rooms and rooms where machinery is in use, as I am satisfied that as a rule they would be useless, or worse, from the fact that in the larger number of manufacturing establishments the engineer is fireman and machinist as well, and from necessity is often out of sound of gong or bell. I have on several occasions visited engine rooms, made my examination and gone on my way, not knowing from personal observation whether there was an engineer connected with the factory or workshop.

I have found it necessary in a few instances to require additional sanitaries in smaller factories. As regards ventilation in factories and workshops, many of my visits having been made during warm weather, when windows and doors were open, I was unable to determine what the condition might be during cold weather, with rooms closed. The modern buildings for manufacturing almost invariably give large air space, and have a great number of windows, which, in connection with the movement of the machinery, give good results.

I have, in accordance with your orders, made special examination and reports of the condition of elevators and their appliances throughout my district. A perusal of said reports will, I think, show that, with few exceptions, they were at the time of inspection in a satisfactory condition; the few exceptions have since been properly repaired or provided with what was lacking. In this connection, I would enter a word of protest against the idea which apparently obtains in some quarters of laying down a cast-iron rule as to the method of guarding elevator wells, my observation showing me that scarcely any two in the same establishment even, and certainly in separate buildings, are arranged alike in all respects, nor are the attending conditions the same; and while in one place a simple bar may be adequate, another of like make in an adjacent room or factory, where a different kind of work is carried on and another class of help employed, may require a much more elaborate safeguard. I have but two fatal elevator accidents to report as occurring during the year, and neither of those was caused through the giving way of hoisting gear or lack of safeguards.

I have, in all instances when visiting factories and workshops coming within the scope of chapter 426, Acts of 1888, made special examination with reference to ways of egress and means of extinguishing fires; and in addition thereto have entered a large number of public halls, tenement and apartment houses, etc., for the same purpose. In all cases where I have found the ways of egress insufficient, I have so reported, and the desired changes have since been made. I have also inspected all hotels in my district subject to the provisions of chapter 251, Acts of 1883, required, and in each instance have found them supplied with the watchmen, lights, gongs, and notices descriptive of ways of egress. In the matter of posting notices of ways of egress, it appears to me that the present law is defective, in that it does not prescribe more definitely the form of notice and size of type. As a rule, I find the notifications printed on the same paper and in the same type as the rules of the house; and, while posted in a conspicuous place, it must be picked out from a mass of printed matter having no bearing on that important subject.

In conclusion, I would again testify as to the spirit of courtesy shown by employers, with rare exceptions, and the readiness with which suggestions have been received and acted upon.

Inspector Halstrick reports: —

In addition to the tabulated report submitted, I desire to state, in view of the work accomplished, that considerable progress has been made during the past year relative to the observance of the various factory laws by the manufacturers in the district assigned me. I found it necessary, in view of what has been achieved, to make many inspections, the results of which necessitated the issuing of a great many written orders relative to the provisions of the various factory laws, which were, with but few exceptions, promptly complied with. I have given special attention to the guarding of all dangerous machinery. The laws relating to the safety of employees have been strictly enforced, the good results of which are quite apparent, especially when considering the comparatively small number of accidents which have occurred during the past year in said factories, the fact of which must certainly be very gratifying to all interested. In connection with this subject, I will endeavor to illustrate the disposition developed on the part of many of the superintendents of said factories, in their endeavors to comply with the provisions of the laws. The growing disposition to conform to the spirit and intent of the law is quite manifest, as I have been invariably requested by said superintendents to make any suggestions which would, in my opinion, add in any way to the comfort of the employees, or would act as a safeguard to the protection of life and limbs, and they would be cheerfully complied with. The fact is quite evident that considerable progress has been made relative to the enforcement of the provisions of said laws, accomplished by diligent and persistent work. To demonstrate that fact, I will call your attention to the apparent pride manifested by many of the superintendents in having their factories run strictly in accordance with the laws, and in view of which they seem more anxious now to conduct the inspector through the establishment than they were while running in violation of the requirements of the law. In fact, they express a desire to have the inspector observe how well the orders have been complied with, and the precautions taken to guard all dangerous machinery so thoroughly that an accident is not likely to occur unless through culpability of the operatives. Although our labors have been less encumbered, in consequence of the manufacturers becoming better acquainted with the provisions of the law, and their readiness to comply, still, I find it necessary to issue many orders daily, in consequence of the many changes being continually made in the factories, and for various other reasons.

Inspector Mullen, whose district comprises Suffolk County, reports: —

I have the honor to report to you the operations of the laws relating to the employment of labor and inspection of various factories and public buildings, which I am directed to enforce.

The enforcement of the inspection laws in my district coming under my supervision, especially those relating to the employment of children and the providing of better sanitary conditions, have been complied with without dissension upon the part of those to whom orders have been issued.

In the employment of children under fourteen years of age, I find a great decrease compared with past years. The tendency seems to be to employ, as far as possible, children of the age of sixteen. The law in regard to employers keeping on file certificates of age and schooling of children is cheerfully complied with.

The law relating to sanitary appliances, chapter 103, Acts 1887, as amended by chapter 305, Acts of 1888, has been of great benefit to those for whom it was intended. The providing of separate water-closets for the two sexes has brought about a result which has been of tenfold value to employees. The law bearing upon the matter of closets is looked upon by owners and agents of buildings, as well as many others, as one of the best laws that could have been enacted; and a ready compliance has always been found, whenever orders have been issued for better sanitary conditions in such places as came under the law.

A ready compliance with the law in relation to posting time-table notices has in every instance met with a hearty response. Upon two or three occasions establishments have been found working in violation of the law, and in the several instances the matter has been remedied.

The law relative to the reporting of accidents, chapter 260 of the Acts of 1886, as amended by chapter 83, Acts of 1890, wherein all accidents must be reported to the District Police, has proved of much value, from the fact that elevator accidents happening in Boston must be reported, as well as all other accidents. Perhaps another important law is that of custodians of elevators, chapter 90, Acts of 1890, wherein no person under fifteen years shall be allowed to operate an elevator, and none under eighteen years to operate an elevator running over two hundred feet per minute. From careful observation, I find an inclination to comply as far as possible with the law. Accidents happen, many of them fatal. The time is not distant when it will be found that a clear, cool head, and presence of mind, will have to be one of the requirements to successfully guard against elevator accidents.

I have found that very many children attend evening schools; and their employers are often anxious, and make arrangements so that those in their employ can obtain an education in that way.

In conclusion, I may add that, so far as my observation has extended, I find a cheerful acquiescence to the laws relating to labor in that portion of Suffolk County coming under my supervision.

Inspector Bardwell reports: —

It is a pleasure to be able to report that in most instances the orders given and the suggestions made in the line of carrying out the provisions of the laws which it is my duty to enforce, have been cheerfully complied with on the part of manufacturers and proprietors of workshops.

In regard to the employment of children, there are fewer at work than in some other districts; but even a small number requires vigilant attention, because of the carelessness upon the part of employers in requiring the proper certificates, — this heedlessness being particularly noticeable in small establishments, where in some cases I find one or more children employed for the first time. In other instances children have been allowed to begin work under promise to procure the certificate at once, the agreement being forgotten or ignored by both parties, until brought to mind by the inspector. The only safe course for the employer to pursue is to allow no child to begin work unless the certificate is presented. A few manufacturers choose to employ no child under sixteen years of age, rather than be obliged to keep the certificates on file. I have found only two instances where children under thirteen were at work, and in both cases the employers were not aware that it was contrary to law, and immediately discharged them. There is a general compliance with the statute providing that women, and minors under the age of eighteen shall not be employed in any mechanical or manufacturing establishment more than sixty hours in a week; and the posting of the legal notices of the hours of labor in every room where such help is employed, giving the time-table for each day of the week, has been carefully attended to.

The duty of inspecting elevators in the city of Boston not devolving upon this department, it leaves but few in my district to look after; these have been carefully examined and tested. In two instances the safety appliance failed to hold the car at the first trial, but did upon the second; a clear indication that every elevator should be frequently tested by the owner, that every part may be kept in perfect repair.

I have found, in common with other inspectors, that, in the matter of grading machinery, frequent visits are advisable, because of the constant changes being made in machines and fixtures, and the refitting and remodelling of buildings. All suggestions tending to the better protection of employees usually receive the hearty co-operation of the proprietors. Although I have given the subject much thought, as I have observed and noted the possibility of a fatal result from the inability to stop the machinery quickly in case a person gets caught therein, I have given no orders to place bells or speaking tubes to connect with the engine room, because I feel that such appliances would be insufficient, and perhaps useless. There are being introduced certain electrical devices for instantly stopping the engine without the aid of the engineer, by pressing any one of several buttons conveniently placed throughout the building; and it is to be hoped that their practical usefulness will be so fully demonstrated that both the manufacturer and inspector will see the necessity for their adoption.

The agitation of the question of the "sweating" system of manufacturing clothing has led to a thorough canvass of dwelling-house workshops in my district, of which there are perhaps forty or fifty, mostly owned or managed by women, employing from three to thirty-five women each in the manufacture of vests. Naturally, such shops are difficult to locate, and in some cases more difficult of entrance, because the employers sometimes think that the fact of their using a dwelling-house should exempt them from supervision. I have thus far visited about one-half of these vest shops, and find that they compare very favorably with other manufactories in the matter of light, ventilation and cleanliness; and, with one exception, the disposition manifested has been to comply with all suggestions tending to improvement in any direction.

Inspector Willard reports: —

I herewith submit my annual report, and, in doing so, am pleased to be able to say that the laws which I am called upon to enforce have in general been well complied with. Still, it needs the constant attention of the inspector; in fact, no one knows how much there is for an inspector to do, who has not tried it. This is not caused generally by a desire on the part of the manufacturer to evade the laws, but more from press of business, or carelessness. They depend too much upon their superintendent or the foremen of the different departments; and, although they have given full instructions in the first place, there is liable to be a change of foreman or overseer, and they forget to give him the same instructions. Again, there is a change of machinery, and the guard is not replaced which had been temporarily removed. There are many other reasons why the inspector's work is never done.

In regard to the employment of children under thirteen, I have found the laws generally well complied with. In a few cases I have found them at work, but in nearly every case it was without the knowledge of the manufacturer, and they were there to help their parents, who had jobs or piece-work to do, and supposed they had a right to employ their own children whenever they saw fit. In every case they have been promptly dismissed, upon understanding the law. I have had some trouble this year about school certificates during vacation. This has not been caused by the employers, but through neglect or ignorance of the school committee. In some of the towns in my district they have insisted that no certificate was required during the vacation of schools, and have written the employers to that effect; but most of them have refused to employ children without an age certificate, and have reported the case to me.

In compliance with instructions, I have given much time to the inspection of elevators, and the result of those inspections has shown to me the necessity of the same. Many have said to me, "My elevator is all right; the safety catches are in good working order;" yet, when it came to the test, they were found entirely useless as a means of safety. This is especially true of the paul and ratchet, as the springs, which are depended upon to force the pauls into the ratchet, become set, and will not work immediately and so are of no use as a means of safety. They cannot be too often tested. In my tests I have found the clutch much more reliable than the paul and ratchet, and neither of them is entirely satisfactory. In my judgment, the only elevator which is entirely safe from falling is the hydraulic direct plunger, with the telescope next in order. All others should be supplied with two or more hoisting ropes. I consider the single-rope elevators, of whatever kind, unreliable, and their construction should be discouraged as far as possible.

In regard to overtime work, I have had but few complaints, and those upon investigation have been found to have been caused by a misunderstanding, or through spite. I have found a few cases where the proprietors of mills, wishing to get all the light possible, to prevent lighting up, have set their clocks ahead instead of changing their schedule time, but in no case have I found them running over sixty hours. This method, however, causes complaints to be sent in about working overtime, and is a technical violation of the law; but, as only the sixty hours were made, I have not felt called upon to prosecute.

In compliance with your instructions, I have visited many hotels, halls, etc., and in most cases have found them well supplied with means of egress. All others have been promptly reported to you.

In conclusion, I desire to say that my relations with all those with whom I am called upon to deal as inspector have been very pleasant, and the uniform courtesy with which I have been received has made my duties much more agreeable.

Inspector James R. Howes reports: —

In making my first report of the district of Berkshire and Franklin counties, which was assigned me, I will say, in regard to the laws which it is my duty to see enforced, I find the manufacturers in my district willing to comply in all cases. At no time after receiving notice that an order would be issued has there been an unwillingness, and in only one instance has the thirty days been exceeded. In this case the company made more extensive changes than ordered, and asked for a longer time. In some places, where the overseers have not understood the laws, I have notified the owners, who have been willing to have them instructed.

I am glad to state that, in relation to the employment of children, the manufacturers are careful not to employ any under fourteen years of age, and that in our district we do not have over thirty thus employed. I can safely say by another year there will be but few employed. I have found none without school certificates, only where owners and overseers had lately taken charge of room or mill. In regard to minors who cannot read or write, I have found a few, of which those living in one city and one town have attended evening schools. But this law reaches only two places in my district, outside of which we can do nothing. In these outside towns there are minors employed who cannot read and write the English language, but there are no evening schools. I think the laws ought to be made to reach towns having a population under ten thousand, as the larger number of illiterate employees are found in the smaller places, there being sixteen to eighteen who cannot read and write.

The sanitary condition of the mills and workshops is improving year by year. The manufacturers see the necessity of the provisions of chapter 103, Acts of 1887, amended by chapter 305 of the Acts of 1888. All seem ready to do as we advise in regard to more closet room, and better ventilation of the same. In cases where the factories do not have access to sewers, a constant watch has been kept, and a good deal of care taken to have good ventilation. Where connections with the sewers allow it, there has been a willingness to put in the improved water-closets.

I find the statutes in regard to the hours of labor of women and minors is complied with, with one exception; and this instance was due to the fact that a new overseer from outside of the State was ignorant of the law.

In regard to the locking of outside doors, I have found that in only two cases has this been done, and this by order of the overseer, unknown to the owners.

Constant watchfulness on the part of the inspector is necessary in regard to the provisions of chapter 104 of the Public Statutes, especially concerning the guarding of shafting, belts and gears. One large mill owner says he leaves the guarding of the machinery to the State inspectors, so that he feels safe after his mills have been inspected and his different superintendents have received orders from them for guarding machinery just put in. If the inspectors are not there within a short time after his repairs have been made, he sends for them to come and make an inspection.

The elevators in the district are in very good condition, there having been no accident during the past year, to my knowledge, on elevators or elevator openings.

In regard to the enforcement of the provisions of chapter 173 of the Acts of 1886, relating to communication between rooms in manufacturing establishments where machinery is propelled by steam, and the room where the engineer is stationed, I will say that we have now two devices: one, patented, which goes on a friction clutch, connected by electric wire to the different rooms, stopping the machinery within a few seconds after pressing the button; the other, invented in this district, communicates with the rooms, the engines and the water wheels, stopping the engine within six seconds. These devices are in use in District No. 5, as well as in mine. The manufacturers use them for stopping machinery from the office, or some station in the different rooms. I would recommend that the above act be amended so that some device might be adopted which could be attached to manufacturing establishments that use water wheels, either on the gate or on friction clutch. The law now applies only to engines; and the greater number of mills in District No. 7, and in my own, are propelled by water power.

I have investigated six fatal accidents in the last six months, five of which were caused by the explosion of boilers or tanks. I would recommend that a law be enacted appointing an expert boiler inspector, and through him to license all engineers and firemen, as is done by the United States laws for steamboats. Many of our firemen and even engineers do not fully understand the handling of an engine. I was in a portable sawmill not long ago, and the man who had charge of the boiler and engines came to me, saying, "What shall I do with a pipe on top of my boiler that leaks badly?" I stepped up, and found that the engineer had fastened an eight-pound window-weight to the plug of the safety valve, to keep it from blowing off.

I wish to say, in conclusion, that I have had the generous support and council of Colonel Merriam, thus receiving the benefit of his experience as inspector in this district.

Inspector McGraw reports: —

I herewith make a brief statement of my first inspection of factories in District No. 6. I am pleased to say that I have been treated with respect and courtesy by the officers and managers of all factories and workshops in this district employing women and minors; and the perfect freedom and readiness to give all information required, and to assist in any investigation I wanted to make, was very gratifying to me. I must here say the changes that have been made in the factories since 1858, when I was an employee in some of them, are so marked and so improved for the benefit of the operatives that I cannot help expressing my appreciation of the change. It is also very evident that the members of the District Police force of this State have carefully and judiciously enforced the factory, workshop and school laws, as they are now being willingly and cheerfully obeyed. As to the sanitary condition of the factories and workshops in this district, the employers and owners have shown a disposition to obey the law, and a willingness to assist the inspector in any suggestion he may make. This is very gratifying, and speaks well for the fairness and justice of the law. As to ventilation, there is a general disposition on the part of all employers of women and minors to improve it to the fullest extent. As to the safety and operation of elevators, I find it is the desire of the manufacturers to guard against accidents, and to establish the rule that a competent person shall be in charge. The fact that so few accidents occur is proof that this rule is effectual. I also find that the school laws are very generally obeyed by superintendents, overseers, parents and guardians of children. Of course there are exceptions, where the overseers have been deceived either by ignorance of the law or inability to understand the English language. The laws regarding the safety of employees have been very well enforced, and the machinery so well guarded that it is hardly possible that an accident can occur, except by carelessness. Complaints are occasionally made that certain mills are running overtime; but, upon investigation, they are found to be untrue, or the time so short it would not warrant a complaint. In most all cases where there was an infringement of the law, the treasurers and directors have willingly ordered a change, when notified. I also find the truant officers are doing their duty faithfully and carefully in enforcing the truant laws.

James H. Chadwick reports: —

In making this my annual report, I am to present but little in addition to my previous ones, the duties being of the same general character as heretofore; orders given being in most cases cheerfully complied with, and the inspector given every facility to examine buildings and to make inquiries as to the employment of women and children.

Several weeks were spent in the city of Fall River, I having been sent there on special detail, to investigate alleged violations of the law regarding the employment of women. The results of my own and other inspectors' observations was that thirteen complaints were made against four corporations in the district court; and, although the evidence reluctantly given by the women sustained the observations of the inspectors, we were unable to convict, on account of the failure to procure complaints properly drawn under the present statute.

In Hyde Park complaints were made against the overseer of a spinning room for the employment of a boy under the age of thirteen; it proved a failure as regards conviction, from the fact that, before the time of the hearing, the boy and his parents had disappeared, therefore could not be summoned to testify as to the age of the boy.

These complaints were all made in good faith, and for the sole purpose of having the law properly observed; and the failure to sustain them, although brought into court, was somewhat embarrassing to the inspector. It has not changed his belief that the law is of great benefit to those who gain their livelihood in factories of this Commonwealth.

The law requiring accidents to be reported to this department is in some cases disregarded, not wilfully, but more through ignorance of the statute, although I have endeavored to inform all interested. I think some employers feel that the reporting of accidents may be used to their injury. But one fatal accident has come to my knowledge in this district during the past year, and that was of such a nature that it could not have been foreseen or guarded against, except by the one who unfortunately lost his life. I find that elevators are still a prolific source of some very serious accidents, and some of them occur at elevators provided with all the safety appliances that the law calls for.

Chapter 348 of the Acts of 1888 is very well observed, but I find that all persons do not interpret the law alike. I refer to the employment of children during the vacations of the public schools. I also find, as in years past, the wants of a large family will send children to the factory when they ought to be in school, and the same will in many cases compel women to work more than the sixty hours per week, when the opportunity to do so presents itself to them.

The law relating to guarding machinery is well observed, and I find that in many cases where persons have been injured by machinery in motion, it was the result of their own negligence. It is well known that all machinery in motion is to some extent dangerous, and requires constant care on the part of the operator.

While the sanitary condition of factories is not all that is desired, there has been a notable improvement; and, as has been stated in previous reports, the lack of systems of sewerage in some of the larger towns is the strongest excuse for not making still greater improvement. Some complaints have been made as to imperfect ventilation in some of the factories. Measures have been taken to improve, and the coming year will show a great advance.

Inspector Knight reports: —

I have the honor herewith to submit the following report regarding the laws intrusted to me to enforce in District No. 7, which comprises Hampden and Hampshire counties. Chapter 348, Acts of the year 1888, "An Act relating to the employment of children under sixteen years of age in factories, workshops and mercantile establishments," I am pleased to report is generally complied with in a very satisfactory manner in this district. I have found very few cases during the past year where this law has been violated, and in no case where I considered it a wilful violation, but more through the result of carelessness or negligence on the part of the overseers or person in charge of the room where the children were employed. When the inspector called the employer's attention to the fact that some children were employed in the factory without certificates, such certificates were procured immediately; and in one case where this occurred the overseer was threatened with immediate discharge if it occurred again while he (the overseer) continued to have charge of the room. I find a marked decrease during the past year in the number of children employed under the age of fourteen. I have found no case where children under thirteen years of age were employed in any factory or workshop. I find, on the whole, this law to be complied with as well as, if not better than, any on the statute book.

Since the evening schools commenced, there has been much time devoted to the enforcement of chapter 433, Acts of the year 1888, "An Act relating to the employment of minors fourteen years of age or over, who cannot read or write in the English language." This law is proving itself, in my judgment, to be a great benefit, not only to the persons in whose behalf the law was enacted, but to the employer as well; as it enables the employees to become more proficient in the discharge of their respective duties, thereby becoming more valuable to their employer. This law is also complied with very satisfactorily in the cities and towns where evening schools are maintained, with excellent results. The superintendents of schools and school committees generally report an increased attendance this year over last, and an apparent desire on the part of the pupils to learn. They also report a large attendance of those who are not obliged to go, but are glad to avail themselves of the privilege offered, in order to avail themselves of the privilege offered, in order to secure an education.

Chapter 103, Acts of the year 1887, "An Act requiring suitable sanitary provisions in all factories, workshops and mercantile establishments," has been greatly improved during the past year, both in regard to the cleanliness and the proper number of closets for the reasonable accommodation of the operatives. I am pleased to report that, in every case where additional accommodations or cleanliness have been required by the inspector, they have been promptly provided. In fact, there seems to be a desire, on the part of those who have charge of such factories or workshops, to do all that is possible to remedy such evils; knowing full well that cleanliness is a great power to promote morality, and thereby elevating humanity. The higher the plane that the operatives reach in that direction, the more their value as citizens and employees is increased.

The guarding of machinery is one of the most important laws that this department is called upon to enforce. I have made a careful inspection of nearly all the elevators in the factories and workshops in my district during the past year, and tested the safety catches to the elevator cars by disconnecting the hoisting rope from the car, and connecting the same by a mechanical device by which the car was detached from the hoisting rope while in motion. In a number of cases the safety device could not withstand this severe test, and, as a result, the car went to the bottom of the well. I have had occasion to issue a number of orders for the better protection of elevator openings, safety catches to the car, new cables or hoisting machinery. There has been no serious accident reported from the unsafe use of elevators in the district during the past year. I have endeavored to impress, on those owning or controlling the use of elevators, the necessity of keeping the hoisting ropes in good condition at all times; and that they have been so cared for may account in a measure for the fact that no serious accidents have occurred.

The law relating to guarding the belting, gearing and shafting, etc., requires much attention on the part of the inspector. Exposed gears and set screws are especially dangerous, and it has been my custom to order them covered when located where an operative could come in contact with them. In this connection I am glad to be able to report that in no part of his work does the inspector receive more hearty co-operation on the part of the manufacturer than in his efforts to prevent accidents. When the attention of the manufacturer is called to any defects in the machinery or any of its parts, he is ready to apply the remedy at once.

The act in regard to bolting or locking doors in buildings wherein operatives are employed, so as to prevent free egress in case of fire, during the hours of labor, is generally complied with in this district, although my attention has been called to a few cases where an outside door has been locked part of the time during such hours. The usual five days' notice was sent, and was complied with at once.

The law relating to the employment of women and children, known as the ten-hour law, has been well complied with in this district; I find a disposition on the part of the employers to obey this law. I have received only one complaint during the past year, when the agent, wishing to shut down on Saturday, labored under the mistaken idea that he could "make up the time" before it was lost.

Courteous treatment has always been accorded the inspector, and a desire manifested on the part of the employer and employees to assist him in his labors. Local truant officers have also rendered valuable assistance in many ways.

Inspector Hammond reports: —

I find, on reviewing the inspection reports made by me for the year last past, that the laws which I am called on to enforce have been fairly well complied with.

In the early part of the year quite a number of overseers in the several cotton mills made a practice of employing children under sixteen years of age without requiring age and schooling certificates. After repeated warnings, I deemed it necessary to proceed against one who had made himself conspicuous in the employment of children in that manner. When brought before the court, he pleaded guilty, paid fine and costs on one count, and two other counts were placed on file. While looking for my witnesses in the case spoken of, I had occasion to visit another mill, and found two children employed there who had been discharged by the first-named overseer. I further discovered that they had no certificate on file with their employer. As I had explained the law, on a previous visit, to the overseer employing them, I immediately made complaint against him, and he was brought before the court, found guilty, and fined on both counts.

In regard to the act relating to the employment of minors who cannot read and write in the English language, I would say that the law is well understood and favored by employers generally, who give their illiterate help to understand that they must attend evening school regularly, or quit work. In almost every case the employees prefer attending school, and very few complaints are made of wilful absentees.

Section 4, chapter 74, requires every employer to post, in a conspicuous place in every room where women or minors are employed, a notice stating the hours of work required of them on each day of the week, etc. A great many small manufacturers are remiss about posting this notice, and say that they have no occasion to do so; that their help work by the piece, and do not work ten hours; but that, if I will send the notices, they will post them. When told that for violating the provisions of the above section the penalty is not less than fifty dollars for each offense, it is seen in a different light by them, and all are pleased to be enlightened on the subject. I would respectfully suggest that the penalty for violation of section 4, chapter 74, be added to the printed form of notice required by said section.

I find very few manufacturers who are familiar with the requirements of chapter 260, Acts of 1886, relative to reports of accidents. Of five fatal accidents that have occurred in this district since April last, four of them were not reported by the manufacturer, as required by the above chapter, until after an investigation had been made by me.

Very little trouble is experienced by me in enforcing the laws relative to guarding machinery, and the safety of elevators. Although I find a great many machines in shoe manufactories without guards, in most cases, upon the manufacturer's attention being called to it, the law is complied with. But occasionally I find one, as I did recently, who can see no good in guarding machinery. In this case the firm were insured against accidents;

and, so long as they thought that the insurance company would pay the bill of damages, they did not seem to care what injury came to their help, if it did not touch their pocket-books. The one I interviewed partially awoke from his dream of security on being informed that the penalty was not less than fifty nor more than five hundred dollars for the violation of any of the provisions of sections 13 to 21 inclusive, of chapter 104, Public Statutes, as amended. He said he would bring the subject before the firm. I shall give them reasonable time to comply with the law, and I think they will find it for their interest to do so.

All entrances to elevators that I have found without proper guards, and also all defective elevators and hoisting cables, I have issued orders to have made safe as far as practicable; and, in every case except one recent order, the parties concerned have cheerfully complied, and in quite a number of instances new and improved elevators have been put in.

Frequent complaints are made to me in regard to the means of egress from boarding-houses in case of fire; but, as the law requires that there shall be ten or more persons above the second story of such a building, before it is operative, I am powerless to act, much to the disgust of the complainant; and it seems to me that, wherever one or more persons lodge or reside above the second story in any such building, suitable egress should be provided for escape in case of fire, by means of knotted ropes or other better appliances.

In conclusion, I would say that I have been received with consideration by manufacturers generally, and especially by those employing large numbers, who are particularly anxious to have all machinery carefully inspected.

DISTRICT REPORTS.

DISTRICT No. 1, ... E. D. ELDRIDGE, *Inspector*.

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
ACTON.								
J. A. Bowen, ...	Shoddy, . .	8	3	–	1	Fair, .	None, ...	–
Chadwick & Merriam, . .	Piano stools, .	26	1	–	–	Good, .	None, ...	–
E Hall & Sons, ...	Tubs and pails, .	12	–	–	–	Fair, .	None, ...	–
A. F. Blanchard & Co., . .	Overalls, . .	2	10	–	–	Good, .	None, ...	–
F. R. Knowlton & Co , . .	Cigars, . .	6	20	–	–	Good, .	Post time tables; designate water-closets; guard opening, . .	Complied.
ARLINGTON.								
Theodore Schwamb, ...	Piano cases, .	25	–	–	–	Fair, .	None, ...	–
Charles Schwamb & Sons, . .	Mouldings, . .	16	–	–	–	Fair, .	Guard cut-off gears of engine, .	In process.
Samuel A Fowle, ...	Spices and colors,	35	–	–	–	Fair, .	Guard set screws; repair safety device; guard opening, . .	In process.
ASHBY.								
A. A. Carr, ...	Tubs and pails, .	12	–	–	–	Fair, .	None, ...	–
AYER.								
Alley Brothers & Place, . .	Leather, . .	118	–	–	–	Fair, .	Repair safety device, and guard opening of elevator, . . .	Complied.
Union Furniture Company, .	Furniture, . .	23	–	–	–	Good, .	None, ...	–

Ayer Furniture Company, . .	Furniture, . .	35	–	–	–	Good, .	None, ...	–
Sigsbee Manufacturing Co , .	Ladies' spec'lties,	–	18	–	–	Good, .	Post time tables; guard shafting, .	Complied.
BILLERICA.								
Talbot Woollen Mills, . .	Flannels, . .	165	110	2	11	Good, .	None, ...	–
Faulkner's Woollen Mills, . .	Flannels, . .	59	36	2	3	Good, .	None, ...	–
CITY OF CAMBRIDGE.								
American Net and Twine Co., .	Nets and seines, .	16	184	–	–	Good, .	None, ...	–
Seavey Manufacturing Company,	Tin-ware, . .	20	35	–	–	Fair, .	Repair safety device, . . .	Complied.
University Press, ...	Printing, binding,	175	125	–	–	Fair, .	None, ...	–
W. H. Wheeler, ...	Job printing, .	10	6	–	–	Fair, .	Provide additional water-closets, .	Complied.
J. H. H. McNamee, ...	Bookbinding, .	14	7	–	–	Fair, .	None, ...	–
Dover Stamping Company, .	Tin-ware, . .	164	20	–	6	Fair, .	None, ...	–
American Rubber Company, .	Boots, shoes, etc.,	650	450	–	1	Good, .	Guard cut-off gears, . . .	Complied.
Mason & Hamlin Piano and Organ Company, ...	Pianos, organs, .	240	5	–	2	Good, .	Repair elevator and gates, . .	Complied.
Carlos L. Page, ...	Boxes, . . .	25	–	–	–	Good, .	None, ...	–
Cambridgeport Diary Company,	Diaries, . .	25	50	–	–	Good, .	None, ...	–
Little, Brown & Co., ...	Bookbinding, .	35	45	–	–	Good, .	New gears for elevator; guard well; designate water-closets, .	Complied.
A. H. Davenport, ...	Furniture, . .	200	–	–	1	Good, .	Post time tables, ...	Complied.
Irving & Casson, ...	Furniture, . .	125	–	–	–	Fair, .	None, ...	–
D. C. Storr & Co., ...	Furniture, . .	30	–	–	–	Fair, .	New cable for elevator, . . .	Complied.
F. A. Kennedy Company, . .	Crackers, etc., .	229	130	–	15	Fair, .	Post time tables, ...	Complied.
Bay State Laundry, ...	Laundry, . .	5	31	–	–	Good, .	None, ...	–
Cambridge Laundry, ...	Laundry, . .	13	119	–	9	Fair, .	None, ...	–
Geo. Close, ...	Confectionery, .	20	35	–	–	Good, .	None, ...	–
H. F. Sparrow & Co., ...	Confectionery, .	8	25	–	4	Fair, .	Certificates for children; designate water-closets; safety device for,	Complied.

DISTRICT NO. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Cambridge — Continued.								
Geo. W. Seaverns,	Piano actions,	51	9	–	10	Poor,	Certificates for children; designate water-closets,	Complied.
Daniels, Barger & Co.,	Furniture,	80	–	–	–	Good,	None,	–
Ivers & Pond,	Pianos,	150	–	–	–	Good,	None,	–
Linene Reversible Collar Co.,	Collars,	38	17	–	1	Good,	None,	–
Keeler & Co.,	Furniture,	35	–	–	–	Good,	None,	–
A. B. & E. L. Shaw,	Furniture,	75	–	–	–	Good,	None,	–
Revere Sugar Refinery,	Sugar,	125	–	–	–	Fair,	None,	–
D. M. Hazen & Son,	Confectionery,	20	30	–	–	Good,	None,	–
Russell & Co.,	Confectionery,	6	17	–	–	Good,	Post time tables,	Complied.
Charles Place,	Paper boxes,	10	50	–	–	Poor,	None,	–
H. M. Sawyer,	Oil clothing,	25	45	–	–	Good,	None,	–
Hawkins Machine Company,	Machinery,	18	–	–	–	Good,	None,	–
Geo. F. Blake Manufacturing Co.,	Steam pumps,	250	–	–	–	Good,	None,	–
Morss Wire Works,	Wire work,	115	50	–	–	Good,	Guard gears of rubber mills, cut-off gears of engine, and elevator openings,	Complied.
T. F. Niddell & Co.,	Confectionery,	6	8	–	1	Good,	None,	–
Underhill & Anderson,	Wooden boxes,	45	–	–	–	Fair,	None,	–
S. Tower,	Piano actions,	165	35	–	6	Fair,	Certificate for boy; post time tables in each room,	Complied.
Henry Thayer & Co.,	Drugs & extracts,	28	28	–	1	Good,	None,	–
Lamb & Ritchie,	Metal conductors,	50	–	–	–	Good,	Guard fly wheel,	Complied.

Geo. R. Oliver,	Piano cases,	45	–	–	–	Good,	Automatic gates and repairs on elevator; connection by bell with engine room,	Complied.
Harvard Piano Company,	Pianos,	34	–	–	2	Good,	Post time table; certificates for children,	Complied.
Schaefer Electric Light Mfg. Co.,	Electrical app.,	33	15	–	–	Good,	None,	–
Standard Action Company,	Piano actions,	23	7	–	–	Fair,	Post time tables; designate water-closet; connect with gong in engine room,	Complied.
Graves & Phelps,	Tables,	35	–	–	–	Fair,	Connect with gong in engine room,	Complied.
Wood Bros.,	Piano keys,	6	–	–	–	Fair,	None,	–
M E. Rideout,	Mouldings,	45	–	–	–	Fair,	Place gong in engine room, and connect; repair safety for elevator,	Complied.
B. P Clark & Co.,	Confectionery,	15	5	–	–	Fair,	None,	–
Riverside Press,	Books,	327	205	–	1	Good,	None,	–
Fred H Houlton & Co.,	Bath-tubs, etc.,	135	–	–	–	Fair,	Guard fly wheel and gears; post time table,	In process.
Harvard Printing Company,	Job printing,	19	1	–	–	Good,	None,	–
Thurston & Hall Bakery,	Crackers,	16	14	–	–	Good,	Post time tables,	Complied.
J. S Bell & Co.,	Confectionery,	5	5	–	–	Good,	Post time table; designate water-closets; safety devices on elevator,	Complied.
C. L. Jones & Co.,	Soap,	40	–	4	5	Good,	Guard fly wheel and cut-off gears,	–
John H. Reardon & Son,	Soap,	125	–	–	5	Good,	None,	–
Cambridge Electric Light Station,	Light and power,	4	–	–	–	Good,	Guard wheels, belts and pulleys,	In process.
American Rubber Co., Branch,	Oil clothing,	17	28	–	–	Fair,	Post time tables,	Complied.
A H Hews & Co.,	Pottery,	80	20	1	9	Fair,	Certificates for children,	Complied.
Cambridge Chronicle,	Newspaper,	5	4	–	–	Poor,	Post time table; provide additional water-closet,	Complied.
A. E. Burton & Co,	Brushes,	26	24	1	1	Fair,	None,	–

DISTRICT NO. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Cambridge — Concluded.								
L Kemp & Sons,.	Soap,	8	–	–	–	Good,	None,	–
Durite Manufacturing Company,	Durite,	8	–	–	1	Good,	None,	–
James C. Davis & Son,	Soap and washing powder,	27	13	–	1	Bad,	New cable for elevator,	–
Boston Woven Hose Company,	Manuf. rubber,	125	30	–	1	Fair,	Guard fly wheel; repair elevator,	Complied.
CHELMSFORD.								
Geo. C. Moore,	Worsted yarns,	78	90	3	6	Good,	Safety for elevator; guard dynamo; designate water-closets,	Complied.
Silver-Gay Company,	Machinery,	15	–	–	–	Good,	None,	–
CONCORD.								
Damon Manufacturing Company,	Flannels,	86	50	2	8	Good,	None,	–
Boston Harness Company,	Harnesses,	92	8	–	–	Good,	Post time table; designate water-closet,	Complied.
DRACUT.								
Collins' Mills,	Coatings,	235	25	2	15	Good,	None,	–
Merrimac Woollen Mills,	Shawls and dress goods,	250	125	1	22	Poor,	Guard fly wheel,	Complied.
EVERETT.								
S B. Pratt & Co ,	Knit goods,	1	45	–	–	Good,	None,	–
C. H Bangs,	Druggists' fixtures,	70	3	–	–	Good,	Post time-table,	Complied.
Waters Governor works,	Machinery,	29	–	–	–	Good,	None,	–

HUDSON.								
F. Brigham & Co.,	Shoes,	128	63	–	4	Good,	Post time-tables; designate water-closet,	Complied.
New England Knitting Co,	Undervests,	1	34	1	4	Good,	Post time-tables; certificate for children,	*–
F. H. Chamberlain,	Shoes,	70	30	–	1	Good,	Guard fly-wheel and cut-off gears,	Complied.
Bradley & Sayward,	Shoes,	61	39	–	4	Fair,	None,	–
Hudson Electric Light Company,	–	1	–	–	–	–	Guard wheels and belts,	Complied.
Jones & Trull,	Shoes,	180	60	–	–	Good,	Post time-tables; designate water-closets,	Complied.
Goodyear Gossamer Company,	†–	30	148	–	2	Good,	Post time-tables; guard set screws,	Complied.
Woodworth Manufacturing Co.,	Wooden pulleys, etc.,	20	–	–	–	Good,	None,	–
Hudson Steam Laundry,	Laundry,	3	4	–	–	Good,	Post time-table,	Complied.
Dunn, Green & Co.,	Leather,	125	–	–	–	Fair,	Guard cut-off gears,	Complied.
A. P Martin & Co,	Shoes,	125	60	1	4	Good,	Portable fire extinguishers,	Complied.
Thomas Taylor,	Elastic goring,	6	4	–	–	Good,	Post time-table; designate water-closets,	Complied.
L. T. Jefts,	Shoes,	100	40	–	1	Fair,	Designate water-closet,	Complied.
Tower Bros.,	Shoe machinery,	10	–	–	–	Good,	None,	–
Stowe, Billz & Hawley,	Shoes,	134	77	–	6	Fair,	None,	–
Robertson & Larkin,	Lumber,	6	–	–	–	Fair,	Guard fly-wheel and cut-off gears,	In process.
GROTON.								
Tileston & Hollingsworth Co.,	Paper,	33	12	–	–	Good,	None,	–
West Groton Mills,	Leather-board,	31	6	–	2	Good,	None,	–
Hollingsworth & Vose,	Manila paper,	23	3	–	–	Good,	Additional water-closet,	Complied.
LEXINGTON.								
M. H. Manning,	Shoe findings,	8	20	–	–	Good,	None,	–

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* Moved to Fitchburg.

† Water-proof garments.

DISTRICT NO. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
LITTLETON.								
Conant, Houghton & Co.,	Suspender web,	12	29	–	–	Good,	None,	–
CITY OF LOWELL.								
American Wire Goods Company,	Wire hardware,	13	–	–	5	Good,	Certificates for children; post time-tables,	Complied.
Merrimac Manufacturing Co,	Prints, shirting, etc.,	1000	2000	8	78	Good,	Guard crank pits in engine room; guard shafting and pulleys; guard for elevator openings,	Complied.
Sterling Mills,	Flannels,	80	55	–	10	Good,	None,	–
Faulkner's Mills,	Wool dress goods,	210	250	–	11	Good,	None,	–
Leadneck Dye and Print Works,	Printed cottons,	37	7	–	1	Fair,	Repair safety of elevator,	Complied
Scripture's Laundry,	Laundry,	5	35	–	–	Good,	Repair safety,	Complied.
Belvidere Woollen Manufacturing Company, No. 1,	Flannels,	50	27	–	4	Poor,	Certificates for children,	Complied.
Belvidere Woollen Manufacturing Company, No 2,	Dress goods,	60	55	–	4	Fair,	Post time-tables,	Complied.
Lowell Hosiery Company,	Cotton hosiery,	61	76	–	9	Good,	None,	–
Whittier Cotton Mills,	Twines,	18	54	–	3	Good,	None,	–
American Bolt Company,	Bolts and nuts,	120	–	–	8	Poor,	None,	–
Lawrence Manufacturing Co,	Cotton cloths and hosiery,	1416	2808	20	338	Good,	Guard crank pits,	Complied.
Tremont and Suffolk Mills,	Cotton cloths,	630	1230	–	97	Good,	Guard crank pits and stairways; repair elevators,	Complied.

White, Brothers & Co., . .	Sheep skins, .	240	–	–	1	Fair, .	Repair safety of elevator, . .	Complied.
New England Bunting Co., .	Bunting and woollens, . . .	14	16	–	–	Good, .	None, ...	–
Wm. Parker & Sons, . . .	Spools & bobbins,	150	–	–	5	Poor, .	None, ...	–
Rice & Co., ...	Wire goods, .	43	–	–	5	Fair, .	None, ...	–
Pickering Knitting Company, .	Cotton underwear,	55	120	–	10	Good, .	None, ...	–
Boot Cotton Mills, . . .	Drills and fancies,	800	1350	1	73	Good, .	None, ...	–
Lowell Worsted Mills, . .	Carpet yarns, .	10	65	2	18	Fair, .	None, ...	–
Massachusetts Cotton Mills, .	Shirting, drills, etc., . . .	500	1200	13	86	Good, .	Guard fly wheel and crank pits, .	Complied.
United States Bunting Company,	Bunting and dress goods, . .	225	325	3	29	Fair, .	None, ...	–
Hamilton Manufacturing Co., .	Cotton cloths, .	450	1550	8	113	Good, .	Guard main pulley and crank pits; guard elevator opening; new ropes for two elevators; designate water-closets, . . .	Complied.
Appleton Company, . . .	Cotton cloths, .	290	510	4	30	Good, .	Guard crank pits and elevator opening, ...	Complied.
Lowell Manufacturing Co., . .	Carpets, . .	947	1087	5	119	Good, .	New ropes for two elevators, .	Complied.
Livingston Mills, ...	Flannels, . .	17	18	–	4	Fair, .	None, ...	–
John Pilling, ...	Shoes, . . .	75	55	–	5	Fair, .	None, ...	–
Kitson Machine Company, . .	Machinery, . .	260	–	–	–	Good, .	None, ...	–
Middlesex Company, . . .	Cloakings, etc., .	400	200	–	16	Good, .	None, ...	–
Crossley Manufacturing Co., .	Cassimeres, .	39	21	–	–	Fair, .	None, ...	–
Shaw Stocking Company, . .	Hosiery, . .	30	275	–	1	Good, .	None, ...	–
Haworth & Watson, . . .	Cop tubes, . .	7	7	–	–	Good, .	Post time tables, ...	–
Lowell Machine Shop, . .	Machinery, . .	1300	–	–	1	Good, .	Safety device on two elevators, .	Complied.
Bay State Dyehouse, . . .	Dyeing, . .	1	4	–	–	Fair, .	Post time tables; provide separate sanitary, ...	Complied.
Boston Dye-house, . . .	Dyeing, . .	1	2	–	–	Fair, .	Post time tables, ...	Complied.
Walter Cliffords Dye-house, .	Dyeing, . .	2	1	–	–	Fair, .	Post time tables, ...	Complied.

District No. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Lowell — Concluded.								
Josiah Gates & Sons,	Leather belting,	12	–	–	–	Good,	None,	–
Troy Steam Laundry,	Laundry,	5	7	–	–	Good,	None,	–
J S Jaques Shuttle Company,	Shuttles,	25	–	–	–	Good,	None,	–
C. Littlefield & Co.,	Paper boxes,	5	30	–	–	Good,	None,	–
Cutter Walker Mfg. Company,	Suspenders and shoe linings,	5	20	–	–	Good,	None,	–
Thorndyke Manufg. Company,	Suspenders and web,	33	67	1	4	Good,	Certificates for children; post time tables in every room,	Complied.
Novelty Suspender Works,	Suspenders and web,	9	26	–	4	Good,	Certificates for children,	Complied.
W. W. Carey,	Wooden pulleys,	12	–	–	–	Fair,	None,	–
W. W Carey,	Machinery,	30	–	–	–	Good,	None,	–
Otis Allen & Son,	Boxes,	54	–	–	1	Good,	None,	–
J C. Ayer Company,	Patent medicines,	125	50	–	4	Good,	None,	–
Marshall & Crosby,	Furniture,	40	–	–	–	Good,	None,	–
Davis & Sargent,	Lumber & boxes,	40	–	–	–	Fair,	None,	–
Geo. W. Fifield,	Lathes,	50	–	–	–	Fair,	None,	–
Knowles Scale Works,	Scales,	12	–	–	–	Good,	None,	–
Novelty Plaster Works,	Sticking-plaster,	15	4	–	–	Good,	None,	–
Amraytown Paper Tube Co,	Cop tubes,	7	1	–	4	Fair,	Post time tables,	Complied.
W. L. Davis,	Elastic web,	2	8	–	–	Good,	Provide additional water-closet,	Complied.
Cook, Taylor & Co.,	Garments,	–	12	–	–	Good,	Post time tables,	Complied.
Avey, Maddock & Locke,	Leather,	150	–	–	–	Fair,	None,	–

Criterion Knitting Company,	Underwear,	6	28	–	1	Good,	None,	–
Sawyer Carriage Company,	Carriages,	20	–	–	–	Good,	Safety device on elevator,	Complied.
Merrimac Croquet Company,	Sporting goods,	60	4	–	–	Good,	None,	–
Lowell Card Company,	Card clothing,	16	5	–	–	Good,	None,	–
Joshua M. Stover,	Shoes,	30	10	–	–	Good,	Post time tables; designate water-closets,	Complied.
Geo W. Harris,	Loom harness,	20	8	–	1	Good,	None,	–
W. H. Carter,	Woollens,	18	18	–	–	Fair,	Post time tables,	Complied.
C. F. Hatch & Co.,	Paper boxes,	10	50	–	–	Good,	None,	–
E. W. Hoyt & Co.,	Cologne,	10	20	–	–	Good,	None,	–
Geo. V. Gregg,	Clothing,	1	12	–	–	Fair,	Post time tables,	Complied.
Walter Coburn & Co.,	Cotton waste,	20	18	–	–	Fair,	None,	–
Lowell Scale Company,	Platform scales,	3	–	–	–	Good,	None,	–
Peavey Cotton Mills,	Cotton yarns,	20	66	–	4	Good,	None,	–
Lamson Consolidated Store Service Company,	*–	210	–	–	–	Good,	None,	–
United States Cartridge Co.,	Cartridges,	80	100	–	25	Fair,	None,	–
E. Hapgood & Son,	Mattresses,	12	4	–	–	Poor,	Post time table; repair exhaust from picker,	–
Middlesex Steam Laundry,	Laundry,	6	22	–	–	Fair,	None,	–
Hamilton & Frost Steam Laundry,	Laundry,	2	13	–	–	Fair,	None,	–
S. C. & G. H. Smith,	Set & tag screws,	15	–	–	–	Fair,	None,	–
E. S. Wheeler,	Loom harness,	1	3	–	–	Good,	Post time table,	Complied.
Lowell Bleachery & Dye-house,	†–	272	21	–	2	Good,	None,	–
Walsh Worsted Mill,	Worsted yarns,	74	25	2	5	Good,	None,	–
CITY OF MALDEN.								
Boston Rubber Shoe Company,	Boots and shoes,	650	750	2	16	Good,	Repair elevators,	Complied.
Bettinson's Steam Laundry,	Laundry,	7	19	–	–	Good,	None,	–
Boston Wall Paper Company,	Wall paper,	60	–	–	12	Fair,	Repair safety on elevator,	Complied.

* Cash railways, registers, etc.

† Bleached and dyed cottons.

DISTRICT NO. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Malden — Concluded.								
National Steam Laundry,	Laundry,	15	85	–	–	Fair,	None,	–
Cochranes' Carpet Mill,	Carpeting,	149	191	–	17	Good,	Repair two elevators,	Complied.
Cochranes' Turkey Red Works,	Printed cottons,	61	24	–	7	Fair,	None,	–
Webster & Co ,	Leather,	170	–	–	–	Fair,	None,	–
S. E. Vaughan & Co.,	Wood and paper boxes,	22	26	–	–	Good,	None,	–
Wiggin & Stevens,	Flint, paper and glue,	28	7	–	–	Fair,	Guard elevator opening; new spring for safety,	Complied.
Howard & Frohock,	Lasts,	20	–	–	–	Poor,	Guard fly wheel and shafting,	Complied.
Hill's Steam Laundry,	Laundry,	8	36	–	–	Good,	None,	–
Geo. P. Cox Last Company,	Lasts,	35	–	–	–	Poor,	None,	–
Tate & Co.,	Wire and braided cords,	18	9	–	–	Good,	Post time table; designate sanitary,	Complied.
Wannalancett Manufacturing Company,	Webbing,	2	17	-	1	Good,	None,	–
B. S. Hale & Son,	Cotton lines,	15	24	–	–	Good,	Guard fly wheel; post time table; designate sanitaries,	Complied
Malden Electric Company,	–	4	–	–	–	Good,	Guard wheels, belts and pulleys,	Complied.
Wadsworth, Howland & Co ,	Paints & varnish,	28	7	–	1	Fair,	Post time tables; designate sanitaries; guard set screws,	Complied.
Adams Bros.,	Cotton waste,	7	1	–	–	Poor,	Guard fly wheel and belt; guard hoist-way opening,	–

MAYNARD.								
Assabet Manufacturing Company,	Wool dress goods,	552	328	4	54	Good,	Repair elevator safety-guard, scuttle opening; guard crank pits,	Complied.
MEDFORD.								
Wainwright Manufacturing Co.,	Steam heating apparatus,	47	–	–	1	Good,	None,	–
Medford Steam Laundry,	Laundry,	6	11	–	–	Good,	Post time tables; designate water-closets,	Complied.
Geo. S. Delano,	Mattresses,	8	7	–	–	Good,	Post time tables; designate water-closets,	Complied.
Mystic Print & Dye Works,	Printed cottons,	66	11	–	4	Fair,	None,	–
Glenwood Dye Works,	Dyed cottons,	20	2	–	–	Good,	None,	–
MELROSE.								
Boston Rubber Shoe Company,	Boots and shoes,	536	459	–	7	Good,	None,	–
Small Bros ,.	Furniture,	25	–	–	–	Fair,	Automatic guard for elevator opening,	–
Melrose Steam Laundry,	Laundry,	2	5	–	–	Fair,	Guard set screws,	Complied.
Jonathan Barrett,	Shoes,	40	20	–	–	Good,	None,	–
PEPPERELL.								
Champion Card Paper Company,	Card paper,	44	10	–	–	Good,	None,	–
Pepperell Card Paper Company,	Card paper,	26	4	–	–	Good,	None,	–
Leighton Bros ,	Shoes,	260	40	–	4	Good,	None,	–
Fairchild Paper Company,	Book paper,	159	72	–	3	Fair,	Repair elevator safeties; guard opening,	Complied.
READING.								
J. W. Richardson,	Shoes,	55	40	–	2	Fair,	None,	–
C. E. Damon & Co ,	Neckties,	7	43	–	–	Good,	None,	–
E. B. Richardson,	Shoes,	60	65	–	1	Good,	None,	–

DISTRICT NO. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Reading — Concluded.								
Reading Rubber Mills,	Carriage covering,	20	–	–	2	Good,	Guard main gears of engine; guard gears of rubber mills; certificates for children; post time table,	Complied.
James A. Horton,	Wire hair brushes & paper boxes,	37	21	–	–	–	Post time table in every room; provide additional water-closet,	–
SHIRLEY.								
C. A. Edgarton & Son,	Suspenders and webbing,	31	54	–	6	Good,	None,	–
B S. Binney,	Leather board,	15	–	–	–	Fair,	Post time table,	Complied.
Samson Cordage Company,	Braided cord,	40	60	–	2	Good,	None,	–
Fredonian Mills,	Cotton bagging,	19	21	–	2	Fair,	None,	–
CITY OF SOMERVILLE.								
Derby & Kilmer Desk Company,	Desks,	80	–	–	–	Good,	None,	–
J. N. Ball,	Pasted shoe stock,	8	24	–	–	Fair,	None,	–
Geo. R. Emerson,	Pickles and preserves,	5	10	–	–	Poor,	None,	–
W. K. Lewis & Bros.,	Pickles and preserves,	10	20	–	–	Fair,	None,	–
Union Glass Company,	Glass ware,	103	7	–	1	Fair,	None,	–
David Walch,	Glass grinding,	15	–	–	–	Fair,	None,	–
American Tube Works,	Metal tubing,	280	–	–	–	Good,	None,	–

Middlesex Bleaching & Dye W'ks,	Bleached dyed cottons,	167	30	–	–	Fair,	Repair elevator,	Complied.
C. W. Lyman,	Furniture,	35	–	–	–	Good,	None,	–
Cushman Bros.,	Shade rollers,	47	20	–	–	Good,	Guard set screw; designate water-closet,	Complied.
Miller Bros.,	Coffins & caskets,	33	2	–	–	Good,	None,	–
Somerville Electric Lighting Co.,	– –	4	–	–	–	Good,	Guard wheels, belts and pulleys,	In process.
STONEHAM.								
Sanborn & Mann,	Shoes,	73	39	–	3	Fair,	Repair elevator; designate water-closets,	Complied.
American Co-operative Store Co,	Shoes,	19	6	–	–	Good,	None,	–
Vinton & Jenkins,	Shoes,	65	50	–	1	Good,	Post time tables,	Complied.
Wm. Tidd & Co.,	Leather,	130	–	–	2	Fair,	Post time table; certificates for children; repair safety for elevator,	Complied.
Green & Jenning,	Shoes,	11	10	–	–	Fair,	None,	–
Keene & Jones Bros,	Shoes,	12	12	–	–	Good,	Portable fire apparatus,	Complied.
H. D. Wallace & Son,	Shoes,	5	5	–	–	Fair,	Post time tables; guard shafting of stitching machines,	Complied.
Worthen & Martin,	Shoes,	15	10	–	–	Fair,	None,	–
J. H. Dempsey,	Shoes,	19	14	–	–	Fair,	None,	–
R. E. Kingsley & Co.,	Shoes,	38	12	–	2	Fair,	Unlock door to way of egress; provide means of extinguishing fire,	Complied.
John M. Noyes,	Shoes,	27	16	–	1	Good,	Post time tables,	Complied.
W. P. Fletcher,	Paper boxes,	4	16	–	–	Fair,	None,	–
F. Bryant,	Shoes,	15	5	–	1	Fair,	None,	–
E. P. Duncklee,	Shoe stock,	11	7	–	–	Fair,	None,	–
L. V. Colahan,	Shoes,	12	6	–	–	Fair,	Guard shafting for stitching machines; designate water-closets; post time tables,	Complied.

District No. 1 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Stoneham — Concluded.								
P. Cogan & Son,	Shoes,	37	23	–	1	Fair,	None,	–
S. W. Kimball,	Shoes,	40	30	–	2	Good,	Face elevator posts,	Complied.
W. D. Byron & Sons,	Currying,	50	–	–	–	Fair,	None,	–
Hamilton Hay,	Shoes,	30	15	–	–	Good,	None,	–
W. H. Farnham,	Lasts,	12	–	–	–	Fair,	None,	–
Benton & Sprague,	Shoes,	15	15	–	–	Good,	None,	–
Middlesex Co-operative Shoe Co.,	Shoes,	21	31	–	–	Fair,	Post time table; guard stitching machines, shafting,	Complied.
G. W. Newhall & Son,	Shoe trimmings,	5	–	–	1	Fair,	Post time table; certificate for boy,	Complied.
H. H. Mawhinney & Co.,	Shoes,	140	100	–	6	Fair,	None,	–
The E. L. Patch Company,	Medical preparations,	25	8	–	1	Good,	Guard gears of massing machine,	Complied.
Tucker & Moulton,	Shoes,	65	40	–	2	Fair,	Certificates for children; keep privy clean,	Complied.
Kelley & Murphy,	Shoes,	25	27	–	1	Fair,	Safety on elevator; unlock door, third story, to way of egress; certificate for minor; post time table; guard machine shafting; portable fire extinguishers,	*–
Green & Littlefield,	Laundry,	2	5	–	–	Fair,	Post time-table,	Complied.
TEWKSBURY.								
Atherton Machine Company,	†–	125	–	–	1	Good,	None,	–

TOWNSEND.								
Townsend Furniture Company,	Furniture,	20	–	–	1	Fair,	None,	–
Spaulding Bros., No. 1,	Leather board and shoe counters,	9	3	–	–	Fair,	None,	–
Spaulding Bros., No. 2,	Leather board,	4	–	–	–	Fair,	None,	–
E. W. Seaver & Co.,	Tubs and pails,	12	–	–	–	Fair,	None,	–
Clarence Stickney,	Barrels and kegs,	9	–	–	–	Good,	None,	–
U. S. Adams,	Barrels and kegs,	38	–	–	–	Fair,	None,	–
WAKEFIELD.								
Harvard Knitting Company,	Jersey underwear,	2	36	–	–	Good,	Post time table; guard shafting for stitching machines,	Complied.
Wakefield & Central Rattan Co.,	Rattan goods,	375	194	–	20	Fair,	None,	–
Smith & Anthony Stove Co.,	Stoves and furnaces,	175	–	–	–	Poor,	None,	–
Henry F. Miller Piano Company,	Pianos,	90	–	–	–	Good,	None,	–
CITY OF WALTHAM.								
Boston Manufacturing Company,	Cotton cloths and knit underwear,	800	650	–	52	Good,	Guard crank of engine and crank pits,	Complied.
Waltham Bleachery and Dye Works,	Bleached and dyed cottons,	240	18	–	–	Good,	None,	–
Waltham Steam Laundry,	Laundry,	4	37	–	–	Good,	Post legal time tables,	Complied.
Waltham Emery Wheel Co.,	Emery wheels,	40	–	–	–	Fair,	None,	–
United States Watch Company,	Watch movem'ts,	84	36	–	–	Good,	None,	–
Waltham Watch Tool Company,	Watch tools,	12	–	–	–	Good,	None,	–
American Steam Laundry,	Laundry,	4	26	–	–	Good,	None,	–
Parmenter Crayon Company,	Crayons,	15	–	–	–	Fair,	None,	–
American Watch Tool Company,	Watch tools and machinery,	63	8	–	–	Good,	None,	–

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* Partial compliance; moved to Lynn.

† Cotton and wool machinery.

DISTRICT NO. 1 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Waltham — Concluded.								
American-Waltham Watch Co , .	Watch movem'ts,	1442	1331	–	14	Good, .	None, ...	–
Roberts Paper Mill, . . .	Roofing and asbestos paper, .	25	–	–	–	Fair, .	None, ...	–
WAYLAND.								
W. & J. M. Bent, No. 1, . .	Shoes, . . .	350	125	–	2	Fair, .	None, ...	–
W. & J. M. Bent, No. 2, . .	Shoes, . . .	44	11	–	–	Good, .	None, ...	–
N. C. Griffin, ...	Shoes, . . .	20	2	–	–	Fair, .	None, ...	–
R. C. Dean, ...	Shoes, . . .	14	1	–	–	Fair, .	None, ...	–
E. F. Dean, ...	Shoes, . . .	6	–	–	–	Fair, .	None, ...	–
C. W. Dean, ...	Shoes, . . .	24	1	–	–	Fair, .	None, ...	–
WESTFORD.								
Abbot & Co., ...	Worsted yarns, .	63	112	6	16	Good, .	None, ...	–
Abbot Worsted Mills, . . .	Worsted yarns, .	75	90	1	17	Good, .	Repair elevator safety, . . .	Complied.
C. G. Sargent's Sons, . . .	Machinery, . .	60	–	–	–	Good, .	Guard fly wheel, ...	Complied.
Brookside Worsted Mills, . .	Worsted yarns, .	42	35	–	4	Fair, .	None, ...	–
WINCHESTER.								
Beggs & Cobb, ...	Leather, . .	78	–	–	–	Fair, .	Guard shafting and pulley; guard elevator openings, ...	–
S. C. Small & Co , ...	Furniture, . .	14	–	–	–	Fair, .	None, ...	–
Loring & Avery, ...	Leather, . .	400	–	–	–	Fair, .	None, ...	–

CITY OF WOBURN.								
G. R. Gage,	Clothing,	1	11	–	–	Good,	Post time tables,	Complied.
City Laundry,	Laundry,	2	4	–	–	Fair,	Post time tables; additional water-closet,	Complied.
G. W. Nichols,	Shoe stitching,	2	20	–	–	Fair,	None,	–
Woburn Steam Laundry,	Laundry,	6	59	–	–	Good,	None,	–
Wilbur E. Cummings,	Shoe stock,	30	55	–	9	Fair,	None,	–
P. McGowan,	Leather,	50	–	–	–	Fair,	None,	–
E. L. Shaw & Co ,	Leather,	183	–	–	–	Fair,	None,	–
Beggs & Cobb,	Leather,	125	–	–	–	Fair,	None,	–
Geo. A. Simonds & Co.,	Shoe stock,	31	60	–	5	Good,	None,	–
E. Rollins,	Shoe stock,	8	22	–	–	Fair,	None,	–
Kenney & Murphy,	Leather,	40	–	–	–	Fair,	Guard stairways,	Complied.
Edward Gallagher,	Shoe stock,	3	15	–	1	Poor,	Post time tables; designate sanitary; certificate for boy,	–
E. G. Place & Co ,	Colored leather,	30	–	–	–	Good,	New spring in safety device of elevator,	Complied.
James Skinner & Co.,	Leather,	50	–	–	–	Good,	None,	–
James Houston & Co.,	Leather,	38	–	–	–	Good,	Guard stairways,	Complied.
E. Cummings & Co.,	Leather,	80	–	–	–	Good,	None,	–
W. P. Fox & Son,	Leather,	45	–	–	–	Fair,	None,	–
P. Calvan & Son,	Shoe stock,	8	22	–	1	Fair,	None,	–
Woburn Electric Light Co ,	– –	4	–	–	–	Good,	Guard wheels, belts and pulleys,	In process.
J. K. Murdock & Co ,	Leather,	75	–	–	–	Fair,	None,	–
J. F. Ramsdell & Co.,	Leather,	70	–	–	–	Fair,	Repair elevator safety,	–

DISTRICT No. 2, ... JOSEPH HALSTRICK, *Inspector*.

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
ASHLAND.								
Houghton, Coolidge & Co., .	Boots and shoes, .	425	75	–	6	Good, .	None, ...	–
Warren Thread Company, . .	Cotton thread, .	20	55	–	–	Good, .	None, ...	–
J. A. Balcom, ...	Shoes, . . .	11	2	–	–	Fair, .	None, ...	–
Chas. Grieshaber, ...	Shoes, . . .	6	–	–	–	Fair, .	None, ...	–
Chattanooga Mills, . . .	Satinets, . .	49	26	–	–	Fair, .	None, ...	–
BELLINGHAM.								
Ray's Woollen Company, . .	Satinets, . .	66	48	–	8	Good, .	None, ...	–
Taft, McKean & Co., . . .	Satinets, . .	37	23	–	2	Good, .	None, ...	–
CITY OF BOSTON.								
Bird & Stevens, ...	Slippers, . .	45	25	–	2	Fair, .	Sanitary provisions; post notice of hours of labor; guard shafting, .	Complied.
George H. Wood Company, .	Shoe dressing, .	1	4	–	–	Good, .	Post notice of hours of labor, . .	Complied.
Henry Woods Sons Company, .	Paints, . .	18	7	–	3	Fair, .	Post notice of hours of labor; certificate for minors; guard belting, .	Complied.
Murray Map and Book Company,	Books, . . .	2	1	–	–	Good, .	None, ...	–
W. J. Barta, ...	Shirts, . . .	1	2	–	–	Fair, .	Sanitary provisions; post notice of hours of labor, ...	Complied.
A. Robert & Foster, . . .	Watch cases, .	25	3	–	–	Good, .	None, ...	–
Eastern Electric Cable Company,	Wire cable, .	42	–	–	3	Fair, .	Certificate for minors; post notice of hours of labor, . . .	Complied.
Boston Advertiser, . . .	Newspaper, .	77	3	–	–	Fair, .	Sanitary provisions, . . .	Complied.

Houghton & Dutton,	Fancy goods,	140	529	4	77	Good,	None,	–
Jordon, Marsh & Co ,	Dry goods,	1900	600	32	268	Good,	None,	–
Hollander, Bradshaw & Folsom,	Fancy goods,	25	120	–	10	Good,	None,	–
Plymouth Rock Pants Company,	Clothing,	182	93	–	11	Good,	None,	–
A P. Ordway & Co.,	Chemist,	1	4	–	–	Fair,	Post notice of hours of labor,	Complied
Wm. A. Davis,	Ink,	6	1	–	–	Fair,	Post notice of hours of labor,	Complied.
Brine & Norcross,	Fancy goods,	6	24	–	–	Good,	Post notice of hours of labor,	Complied.
Mrs. R. Robenson,	Underwear,	–	3	–	–	Good,	Post notice of hours of labor,	Complied.
Codman & Shurtleff,	Surgical instruments,	21	4	–	–	Good,	Post notice of hours of labor,	Complied.
Wm. S. Butler & Co ,	Fancy goods,	50	125	2	12	Good,	None,	–
Frederick Alford,	Regalias,	2	3	–	–	Good,	Post notice of hours of labor,	Complied.
Wm. G. Harris,	Carpets,	16	4	–	–	Good,	None,	–
Simpson & Co ,	Gloves,	2	10	–	–	Good,	None,	–
Hewins & Hollis,	Furnishing goods,	8	20	–	–	Good,	Post notice of hours of labor,	Complied.
J. E Chase,	Frames,	15	–	–	–	Good,	Post notice of hours of labor,	Complied.
Parker Brothers,	Fancy goods,	7	14	–	1	Good,	None,	–
G. J. Walter,	Embroideries,	–	12	–	1	Good,	Post notice of hours of labor,	Complied.
Mrs. C. Neal,	Fringe,	–	15	–	–	Good,	Post notice of hours of labor,	Complied.
Mudie Library,	Books,	2	1	–	1	Good,	None,	–
Mrs W. P Fogg,	Dressmaking,	3	15	–	–	Good,	Post notice of hours of labor,	Complied.
Mrs. A M Waite,	Dressmaking,	–	2	–	–	Good,	Post notice of hours of labor,	Complied.
Mills & Gibb,	Embroideries,	–	–	–	1	Good,	Post notice of hours of labor,	Complied.
Miss E. V. Crooker,	Millinery,	2	3	–	–	Good,	Post notice of hours of labor,	Complied.
H. G. Stepp,	Dressmaking,	–	10	-	1	Good,	Post notice of hours of labor,	Complied.
The Redpath Lyceum Bureau,	Agency,	–	2	–	1	Good,	Post notice of hours of labor,	Complied.
American Protective League,	Insurance,	1	5	–	–	Good,	Post notice of hours of labor,	Complied.
Miss J. A. Woodman,	Dressmaking,	2	12	–	1	Good,	None,	–
Miss G. E. Marden,	Dressmaking,	–	2	–	–	Good,	None,	–
Wm. C. Boardman & Son,	Tailoring,	2	6	–	–	Good,	Post notice of hours of labor,	Complied.
Mrs. M. H. Freeman,	Dressmaking,	–	4	–	–	Good,	Post notice of hours of labor,	Complied.

DISTRICT NO. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Miss J. M. Boston,	Millinery,	–	3	–	–	Good,	Post notice of hours of labor,	Complied
Miss O. D. Garcelon,	Dressmaking,	–	15	–	–	Fair,	Post notice of hours of labor,	Complied.
N. D. Whitney,	Hosiery,	17	6	–	1	Good,	None,	–
L. C. Chase,	Blankets,	7	73	–	–	Good,	None,	–
Carter's Inks,	Inks,	30	24	–	–	Good,	None,	–
Miss E. Drew,	Dressmaking,	–	19	–	–	Good,	Post notice of hours of labor,	Complied.
Mrs F. H Pierce,	Dressmaking,	–	24	–	1	Good,	Post notice of hours of labor,	Complied.
Mme. L Lachambre,	Dressmaking,	–	20	–	–	Good,	Post notice of hours of labor,	Complied.
Mrs. D. P. McKenney,	Dressmaking,	–	13	–	–	Good,	Post notice of hours of labor,	Complied.
Miss S E. Copeland,	Dressmaking,	–	8	–	2	Good,	Post notice of hours of labor,	Complied.
Wright & Potter,	Printers,	95	35	–	–	Good,	None,	–
Miss C. E. Timmens,	Dressmaking,	–	5	–	–	Good,	Post notice of hours of labor,	Complied
E. J. States,	Fancy goods,	4	14	–	1	Good	None,	–
Geo. H. Hastings,	Photographer,	11	5	–	–	Good,	None,	–
R. H Stearns,	Dry goods,	60	140	–	–	Good,	None,	–
Mme. L. Graves,	Modiste,	–	5	–	–	Good,	None,	–
Miss L. P. Forshnor,	Dressmaking,	–	5	–	1	Good,	Post notice of hours of labor,	Complied.
Miss Kate Holland,	Dressmaking,	–	8	–	1	Good,	Post notice of hours of labor,	Complied.
Miss M. E. Ford,	Millinery,	–	4	–	–	Good,	None,	–
Miss M. Felton,	Millinery,	–	7	–	–	Good,	Post notice of hours of labor,	Complied.
Miss A. V. Doyle,	Millinery,	–	2	–	–	Good,	Post notice of hours of labor,	Complied
Stone & Bros.,	Dressmaking,	–	16	–	–	Good,	Post notice of hours of labor,	Complied
Miss C. Miller,	Millinery,	–	2	–	–	Good,	Post notice of hours of labor,	Complied.

Miss M Dunham,	Dressmaking,	–	2	–	–	Good,	Post notice of hours of labor,	Complied.
H. Herrmann,	Millinery goods,	7	4	1	–	Good,	None,	–
Mrs J. E. Marshall,	Regalia,	–	6	–	–	Good,	Post notice of hours of labor,	Complied
G. E Horton,	Dressmaking,	–	12	–	–	Good,	Post notice of hours of labor,	Complied.
M. T. Duval,	Cloaks,	3	8	–	–	Good,	Post notice of hours of labor,	Complied.
Bowles & Co ,	Ladies' tailoring,	2	8	–	–	Good,	Post notice of hours of labor,	Complied.
G. M. Greenwood,	Dressmaking,	–	3	–	–	Good,	Post notice of hours of labor,	Complied.
A. J. Tower,	Water-proof clothing,	75	200	–	–	Good,	None,	–
Sewell & Day Cordage Company,	Cordage,	305	166	–	11	Good,	None,	–
Union Laundry,	Laundry,	4	13	–	2	Good,	Certificate for minors,	Complied.
Pearson's Cordage Company,	Cordage,	290	250	–	45	Good,	None,	–
Boston Oakum Company,	Oakum,	17	5	–	–	Bad,	None,	–
Globe Nail Works,	Nails,	30	30	–	–	Good,	None,	–
New England Piano Company,	Pianos,	301	24	–	–	Good,	None,	–
G. S Guyer & Co ,	Felt hats,	60	40	–	–	Fair,	None,	–
The E. Howard Watch Company,	Watches,	125	50	–	–	Good,	None,	–
Boston Piano Company,	Pianos,	25	–	–	–	Good,	None,	–
Griffith's Steam Laundry,	Laundry,	20	70	–	5	Good,	None,	–
American Hand Laundry,	Laundry,	1	10	–	–	Good,	None,	–
J. W. Strieder,	Cigars,	35	12	–	–	Good,	None,	–
Dennison Manufacturing Co ,	Tags,	165	160	–	7	Good,	None,	–
L Prang & Co.,	Art novelties,	75	75	–	–	Good,	None,	–
A. Ziegler,	Silk trimmings,	12	63	–	6	Good,	None,	–
John Hammerdinger,	Tailoring,	7	3	–	–	Fair,	Post notice of hours of labor; sanitary provisions,	Complied.
L. Borovske,	Tailoring,	12	4	–	–	Fair,	Sanitary provisions; post notice of hours of labor,	Complied.
Roxbury Carpet Company,	Carpets,	250	450	–	70	Good,	None,	–
Boston Thread & Twine Co.,	Thread and twine,	50	100	2	16	Good,	None,	–
Cable Rubber Company,	Rubber clothing,	38	37	–	–	Good,	None,	–

DISTRICT No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston Continued.								
Acme Silver Plate Company,	Plated ware,	23	–	–	–	Good,	None,	–
Styles & Winslow,	Morocco,	25	–	–	–	Fair,	None,	–
Fiedler & Moeldner & Co.,	Silk,	15	55	–	10	Good,	None,	–
Phelps & Lombard,	Morocco,	25	20	–	–	Fair,	None,	–
N. E. Morocco Works,	Morocco,	5	5	–	–	Fair,	None,	–
Acme Laundry,	Laundry,	3	6	–	–	Fair,	Post notice of hours of labor,	Complied.
Shawmut Laundry,	Laundry,	20	22	–	–	Good,	None,	–
Roxbury Steam Laundry,	Laundry,	2	16	–	–	Good,	None,	–
Standard Cordage Company,	Rope and twine,	80	46	–	4	Good,	None,	–
City Laundry,	Laundry,	5	45	–	1	Good,	None,	–
Sargent's Steam Laundry,	Laundry,	3	33	–	–	Good,	Post notice of hours of labor,	Complied.
Boston Hotel and Steamboat Laundry,	Laundry,	9	28	–	3	Good,	None,	–
Fiedler Weinz Company,	Silk trimmings,	10	65	–	4	Good,	None,	–
F. P. Adams & Co.,	Bottlers of extracts,	5	6	–	–	Good,	Post notice of hours of labor,	Complied.
Bay State Axle Washer,	Axle washer,	6	11	–	–	Good,	Post notice of hours of labor,	Complied.
L. E. Jenks,	Silver ware,	6	–	–	–	Good,	Post notice of hours of labor,	Complied.
Intelligent Can Company,	Cans,	14	6	–	–	Good,	Post notice of hours of labor,	Complied.
Atkinsons,	Dining rooms,	10	10	–	–	Fair,	Sanitary provisions,	Complied.
Chas P. Dunn,	Sign painter,	3	–	–	–	Fair,	Sanitary provisions,	Complied.
A. F. Freeland,	Jeweller,	2	–	–	–	Fair,	Sanitary provisions,	Complied.
Margot Bros.,	Watch cases,	12	3	–	–	Good,	None,	–

Joseph Frederick,	Tailoring,	5	10	–	–	Fair,	Sanitary provisions,	Complied.
Sam'l Calish,	Tailoring,	20	23	–	–	Fair,	Post notice of hours of labor,	Complied.
Clark & Rosnoski,	Tailoring,	25	30	–	–	Good,	None,	–
Marks & Abrams,	Tailoring,	15	20	–	2	Good,	None,	–
Louis Daniels,	Tailoring,	9	3	–	1	Fair,	Post notice of hours of labor,	Complied.
Levy Goldberg,	Tailoring,	3	1	–	–	Fair,	Post notice of hours of labor,	Complied.
Rice & Hutchins,	Boots and shoes,	200	40	–	6	Good,	None,	–
Boston Bank Note Company,	Lithography,	30	4	–	–	Fair,	Post notice of hours of labor; sanitary provisions,	Complied.
M. Miglouie,	Tailoring,	10	6	–	–	Fair,	Post notice of hours of labor; sanitary provisions,	Complied.
Hyman Goldberg,	Tailoring,	14	9	–	–	Fair,	Post notice of hours of labor,	Complied.
Henry Bright & Co.,	Ladies' wrappers,	–	17	–	1	Good,	None,	–
Lamson & Hubbard,	Hatters,	14	4	–	–	Good,	None,	–
F. Schwender,	Tailoring,	4	6	–	–	Good,	None,	–
S. C. Chase & Co,	Over gaiters,	–	5	–	–	Good,	None,	–
S. A. Seavey & Co,	Whalebone,	4	1	–	–	Good,	None,	–
A Jacobs,	Tailoring,	7	25	–	–	Good,	None,	–
P. J. Jansen,	Tailoring,	2	2	–	–	Good,	None,	–
John J. Baird,	Paper boxes,	1	9	–	3	Good,	None,	–
L. Sneider,	Tailoring,	11	9	–	–	Good,	Post notice of hours of labor,	Complied.
H. Leonard & Co,	Surcingles,	3	10	–	–	Fair,	None,	–
Himmell & Schmidgruber,	Cigars,	3	1	–	–	Good,	None,	–
Walter M. Lowney,	Confectionery,	159	153	–	–	Good,	None,	–
J. W. Hamilton,	Printers,	14	1	–	1	Good,	None,	–
J. E. Ballou,	Printers,	3	3	–	–	Good,	None,	–
Building News,	Printers,	–	2	–	–	Fair,	Sanitary provisions; post notice of hours of labor,	Complied.
H. Krikorian,	Confectionery,	10	37	1	2	Good,	None,	–
J. L. H Cobb,	Narrow webbing,	9	16	–	–	Good,	None,	–
F. P. Robertson,	Hosiery,	2	9	–	–	Good,	None,	–

District No. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Concluded.								
Henry G. Collins,	Printing,	56	14	1	1	Good,	Post notice of hours of labor,	Complied.
Collens Pattern Company,	Publishers,	7	3	–	1	Good,	Post notice of hours of labor,	Complied.
N. F. Connor,	Paper ruling,	5	5	–	–	Good,	Post notice of hours of labor,	Complied.
N. Wilson & Co,	Bindery,	30	60	–	–	Good,	None,	–
E. Fleming & Co.,	Bindery,	70	70	–	–	Good,	None,	–
American Cultivator Publishing Company,	Publishers,	8	13	–	1	Good,	None,	–
Little, Maxwell & Co.,	Boots and shoes,	55	45	–	5	Good,	Certificate for minors; post notice of hours of labor,	Complied.
A. L. Macdonald & Co.,	Bookbinders,	5	5	–	–	Good,	Post notice of hours of labor,	Complied.
H. E. Swift & Co.,	Electrical supplies,	22	18	–	–	Good,	Sanitary provisions,	Complied.
Franklin.								
Trowbridge Piano Company,	Pianos,	12	–	–	–	Good,	None,	–
Waites' Felting Mill,	Felting,	29	1	–	2	Fair,	None,	–
Snow, Bassett & Co.,	Straw goods,	50	75	–	1	Good,	None,	–
Franklin Hat Bleachery,	Bleachery,	2	2	–	–	Good,	Post notice of hours of labor,	Complied.
Ereckson, Stewart & Thayer,	Straw goods,	25	125	–	–	Good,	None,	–
Ray Woolen Company,	Shoddy,	26	4	–	–	Good,	None,	–
Ray's Cassimere Mill,	Cassimeres,	107	28	–	2	Good,	None,	–
Charles J. McKenzie,	Satinets,	22	18	–	1	Good,	None,	–
Franklin Knitting Company,	Fleece linings,	18	9	–	1	Good,	None,	–

Saxon Worsted Company, . .	Worsted goods. .	80	90	–	4	Good, .	None, ...	–
Boston Rubber Company, . .	Rubber boots and shoes, . .	95	80	–	–	Good, .	None, ...	–
HOLLISTON.								
Forbes, Wilson & Co., . .	Boots and shoes, .	27	3	–	–	Good, .	Post notice of hours of labor, . .	Complied.
E. J. Driscoll & Co., . . .	Boots and shoes, .	24	1	–	–	Good, .	Post notice of hours of labor, . .	Complied.
Holliston Harness Company, .	Harnesses, . .	28	2	–	–	Fair, .	Post notice of hours of labor, . .	Complied.
John Clancy, ...	Boots and shoes, .	38	2	–	–	Good, .	None, ...	–
D. C. Mowry & Co., . . .	Straw hats, . .	40	120	–	–	Good, .	None, ...	–
HOPEDALE.								
Hopedale Elastic Fabric Co., .	Elastic fabrics, .	29	86	–	4	Good, .	None, ...	
The Dulcher Temple Company,	Loom temples, .	40	5	–	–	Good, .	None, ...	–
HOPKINTON.								
G. and F. W. Wood, . . .	Boots and shoes, .	90	10	–	2	Good, .	None, ...	–
S. and A. Crooks & Co., . .	Boots and shoes, .	375	125	–	10	Good, .	None, ...	–
A. Coburn, ...	Boots and shoes, .	230	20	–	2	Good, .	None, ...	–
Erastus Thompson & Co., . .	Boots and shoes, .	150	25	–	4	Good, .	None, ...	–
MARLBOROUGH.								
J. B. Billings, ...	Boots and shoes, .	94	46	–	12	Good, .	None, ...	–
The Boyd Corey Boot and Shoe Manufacturing Company, .	Boots and shoes, .	455	120	–	8	Good, .	None, ...	–
Rice and Hutchins' Middlesex Shoe Company, . . .	Shoes, . . .	150	100	–	10	Good, .	None, ...	–
Com'nw'lth Shoe and Leather Co.,	Boots and shoes, .	370	130	–	–	Good, .	None, ...	–

DISTRICT NO. 2 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Marlborough — Concluded.								
John O. Connell & Sons,	Shoes,	100	50	–	–	Good,	None,	–
Rice Hutchins Cotton Avenue Shoe Company,	Shoes,	245	130	–	17	Good,	None,	–
Frank & Duston,	Paper boxes,	9	63	–	6	Good,	None,	–
Marlborough Steam Laundry,	Laundry,	6	17	–	–	Good,	None,	–
Chase, Merrett & Co.,	Shoes,	160	65	–	3	Good,	None,	–
J. F. Desmond,	Shoes,	53	12	–	1	Good,	None,	–
H. O. Russell & Co.,	Boots and shoes,	55	45	–	2	Good,	None,	–
S. H. Howe Shoe Company,	Shoes,	115	45	–	3	Good,	None,	–
T. A. Coolidge,	Shoes,	190	60	–	2	Good,	None,	–
Elmer Loring,	Remnant tappings,	16	1	–	–	Good,	None,	–
S. H. Howe Shoe Company,	Shoes,	305	70	–	27	Good,	None,	–
The Diamond F,	Shoes,	175	125	–	15	Good,	None,	–
John F. Frye,	Boots and shoes,	275	50	–	4	Good,	None,	–
MEDWAY.								
Medway Boot and Shoe Company,	Boots and shoes,	201	60	1	11	Good,	None,	–
J. W. Thompson & Co.,	Boots and shoes,	40	30	–	1	Good,	None,	–
Hirsh & Park,	Straw goods,	10	40	–	–	Good,	None,	–
Leander S. Daniels,	Boots and shoes,	44	6	–	–	Good,	None,	–
A. M. Smith,	Boots and shoes,	102	5	–	–	Fair,	None,	–
N. E. Awl and Needle Company,	Awls and needles,	16	14	–	–	Good,	None,	–
Spencer Company,	Paper boxes,	1	7	–	–	Good,	None,	–

MILFORD.								
Colburn, Fuller & Co.,	Shoes,	250	100	–	–	Good,	None,	–
Greene Bros ,	Heels,	100	50	–	20	Good,	None,	–
Milford Shoe Company, No. 2,	Shoes,	82	93	–	3	Good,	None,	–
Milford Shoe Company,	Shoes,	83	92	–	–	Good,	None,	–
Eastman & Hobart,	Paper boxes,	5	25	–	1	Good,	None,	–
Lilley & Co ,	Needles,	4	6	–	2	Good,	None,	–
James S. Kelly,	Shoes,	37	13	–	1	Good,	None,	–
Claflin & Thayer,	Boots and shoes,	90	10	–	–	Good,	None,	–
C. F. Quiggle & Co ,	Shoes,	21	4	–	–	Good,	None,	–
Jones & Wilkins,	Straw hats,	25	75	–	–	Good,	Guard shafting,	–
MILLIS.								
Waites' Felting Mill,	Felting,	17	–	–	–	Good,	None,	–
Baltimore Paper Mill,	Paper,	9	–	–	–	Bad,	None,	–
NATICK.								
J. O. Wilson & Co.,	Shoes.	325	75	–	–	Good,	None,	–
J. L. Woodman,	Boots and shoes,	62	8	–	–	Good,	None,	–
H. Harwood & Sons,	Base balls,	10	15	–	–	Good,	None,	–
A I. & G. W Travis,	Boots and shoes,	45	5	–	–	Good,	None,	–
Richard Hayes & Son,	Boots and shoes,	66	9	–	–	Good,	Guard shafting; post notice of hours of labor,	Complied.
Riley, Pebbles & Co ,	Boots and shoes,	125	25	–	–	Good,	None,	–
Johnson, Dale & Aldrich,	Boots and shoes,	135	15	–	–	Good,	None,	–
J. W. Walcott & Co.,	Boots and shoes,	110	15	–	–	Good,	None,	–
Sheldon Bros.,	Boots and shoes,	13	2	–	–	Good,	None,	–
R. Best & Sons,	Shoes,	25	5	–	–	Good,	None,	–
John A. D. Mills,	Shirts,	–	10	–	–	Good,	None,	–

DISTRICT NO. 2 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Natick — Concluded.								
C. H Felch,	Shoes,	8	4	–	–	Good,	None,	–
Felch Bros.,	Shoes,	88	12	–	–	Good,	None,	–
NEEDHAM.								
Wm Carter & Co,	Knit goods,	20	30	–	7	Good,	None,	–
Moseley & Co.,	Knit goods,	10	30	–	–	Good,	None,	–
Wm. Toone,	Knit goods,	5	1	–	–	Good,	None,	–
Alexander Lynes,	Knit goods,	6	29	–	–	Good,	None,	–
Union Cycle Manufacturing Co.,	Cycles,	40	–	–	–	Good,	None,	–
SOUTHBOROUGH.								
Cordaville Woolen Company,	Blankets,	31	22	–	3	Fair,	None,	–
G. B. Brigham,	Boots and shoes,	115	10	–	4	Fair,	None,	
SOUTH FRAMINGHAM.								
Para Rubber Shoe Company,	Rubber shoes,	359	314	–	–	Good,	None,	–
F L Barber & Co,	Straw goods,	150	275	–	–	Good,	None,	–
Gossamer Rubber Clothing Co.,	Rubber clothing,	15	–	–	–	Good,	None,	–
Gregory & Co,	Boots and shoes,	320	40	–	3	Good,	None,	–
A. H. Ordway,	Rattan chairs,	40	–	–	–	Good,	Post notice of hours of labor,	Complied.
H A. Marston,	Cane,	15	5	–	–	Good,	Post notice of hours of labor,	Complied.
New England Rattan Company,	Rattan goods,	36	4	–	–	Good,	Post notice of hours of labor,	Complied.
So. Framingham Steam Laundry,	Laundry,	3	3	–	–	Good,	None,	–

WELLESLEY.								
A C. Wiswell & Son,	Paper,	13	–	–	–	Good,	None,	–
R F Sullivan,	Wool substitutes,	15	15	–	–	Good,	None,	–
C F. Crehore,	Press paper,	9	1	–	–	Good,	None,	–
W. S. & F. Cordingly,	Shoddy,	17	1	–	–	Good,	None,	–
Dudley Hosiery,	Knit underwear,	41	75	–	2	Good,	None,	–
DISTRICT No. 3,							ISAAC S. MULLEN, *Inspector*.	
CITY OF BOSTON.								
Union Carpet Lining Company,	Linings,	45	35	1	1	Good,	None,	–
Chicago Frame Company,	Frames,	3	–	–	–	Good,	None,	–
H. Coyne,	Clothing,	6	14	–	–	Fair,	Provide water-closet,	Complied.
Geo. N Seamen & Co.,	Japanese,	3	3	–	–	Good,	Provide water-closet,	Complied.
J. S Rice,	Tin cans,	18	–	–	–	Good,	None,	–
J. F. Murphy,	Tin cans,	3	–	–	–	Good,	None,	–
Geo W Dickerman,	Paper boxes,	85	170	1	1	Good,	None,	–
H M. Richards,	Jewelry,	40	20	–	1	Good,	None,	–
M. W Carr & Co.,	Jewelry,	55	120	–	1	Good,	None,	–
Alexander Lebwahl,	Cigars,	8	1	–	–	Good,	None,	–
Goldsmith, Silver & Co,	Cigars,	34	16	–	–	Good,	None,	–
Henry Traiser & Co,	Cigars,	30	20	–	–	Good,	None,	–
P. H. Grady,	Clothing,	2	14	–	–	Good,	None,	–
L Frangello,	Clothing,	4	1	–	–	Good,	None,	–
Elias Howe,	Musical instruments,	7	–	–	–	Fair,	None,	–
Charles Friedman,	Clothing,	4	3	–	–	Fair,	None,	–
Gustavus Asp,	Clothing,	1	4	–	–	Fair,	None,	–
John Lindall,	Clothing,	4	2	–	–	Fair,	None,	–

DISTRICT NO. 3 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
F. K Brandman,	Shirts,	1	4	–	–	Fair,	None,	–
Wheelock & Co ,	Paper boxes,	5	25	1	1	Good,	None,	–
E. C. Stevens & Co ,	Printer,	2	–	–	–	Fair,	None,	–
G. M. Cushman,	Shirts,	4	1	–	–	Good,	None,	–
S. Schendall & Co.,	Cigars,	4	6	–	–	Fair,	None,	–
J. D & R. M. Riley,	Umbrellas,	3	4	–	–	Fair,	None,	–
Cobb, Bates & Co.,	Groceries,	5	6	–	–	Good,	Provide water-closet,	Complied.
Oriental Tea Store,	Tea,	35	5	–	1	Good,	Provide water-closet,	Complied.
Lyman, Gibbs & Co.,	Dry goods,	22	7	–	1	Good,	None,	–
Caleb Bowker,	Dry goods,	4	3	–	–	Good,	Provide water-closet,	Complied.
Boston Shoe Store,	Boots and shoes,	5	1	–	1	Good,	None,	–
C. K Mitchell,	Fancy goods,	20	18	–	–	Good,	None,	–
Brine & Norcross,	Fancy goods,	100	65	–	–	Good,	None,	–
Silas Drew,	Dry goods,	12	6	–	1	Good,	Provide water-closet,	Complied.
Massachusetts Boot & Shoe Store,	Boots and shoes,	14	2	–	1	Good,	None,	–
Rosenbaum Brothers,	Clothing,	14	8	–	–	Fair,	None,	–
Star Corset Company,	Fancy goods,	30	26	–	3	Fair,	None,	–
F. A. Walker & Co ,	Kitchen furniture,	18	–	–	1	Good,	None,	–
Morss & White,	Wire,	16	–	–	2	Good,	None,	–
Boston Printing Company,	Printing,	3	–	–	1	Good,	None,	–
Alles & Fisher,	Cigars,	110	33	–	–	Good,	None,	–
Finn & Kelley,	Hats,	6	–	–	1	Good,	None,	–
Jas. B. McA'Loon,	Clothing,	7	2	–	–	Fair,	Provide water-closet,	Complied.

Scriptural Tract Depository, .	Books, . . .	3	10	–	1	Fair, .	Provide water-closet, . . .	Complied.
J. B McA'Loon, ...	Clothing, . .	4	12	–	–	Fair, .	Provide water-closet, . . .	Complied.
G. H. Gilbert, ...	Clothing, . .	10	10	–	–	Fair, .	Provide water-closet, . . .	Complied.
Boston Job Printing Company, .	Printing, . .	56	–	–	–	Good, .	None, ...	–
Frost & Adams, ...	Artists' materials,	15	3	–	–	Good, .	None, ...	–
Tobias & Wall, ...	Trunks, . .	5	2	–	–	Good, .	Provide water-closet, . . .	Complied.
H. B. Pratt, ...	Clothing, . .	4	2	–	–	Fair, .	Provide water-closet, . . .	Complied.
J. Otis McFadden, . . .	Window shades, .	10	2	–	–	Good, .	Provide water-closet, . . .	Complied.
J. W. Ripley, ...	Book bindery, .	6	3	–	–	Fair, .	Provide water-closet, . . .	Complied.
W. H. Chandler, ...	Book bindery, .	4	–	–	1	Fair, .	None, ...	–
R. J. Haynes, ...	Paper rulers, .	3	1	–	–	Fair, .	None, ...	–
John P. Lovell, ...	Guns, . . .	19	4	–	–	Good, .	None, ...	–
Miss Gordon, ...	Vests, . . .	1	14	–	1	Fair, .	Better sanitary provisions, . .	Complied.
Shirley Smith, ...	Costumer, . .	1	2	–	–	Good, .	None, ...	–
A. T. Thompson & Co., . .	Stereoptican, .	3	–	1	–	Good, .	None, ...	–
A M. Gewdron, ...	Photographs, .	2	4	–	–	Good, .	None, ...	–
Lynn and Boston Railroad Office,	Tickets, . .	3	2	–	1	Good, .	None, ...	–
O. Larson, ...	Clothing, . .	35	12	–	–	Good, .	None, ...	–
C. J Tornquest, ...	Clothing, . .	5	3	–	1	Good, .	None, ...	–
H. C. Barnes, ...	Musical instruments, . .	5	1	–	1	Fair, .	None, ...	–
G. W. Stratton & Co., . . .	Musical, . .	1	4	–	–	Good, .	None, ...	–
Rust & Richardson, . . .	Drugs, . .	14	2	–	–	Good, .	None, ...	–
G W. Putnam, ...	Various, . .	21	3	–	–	Good, .	Provide water-closet, . . .	Complied.
H Partridge & Co., . . .	Fancy, . .	15	8	–	1	Good, .	None, ...	–
M. Goldberg, ...	Clothing, . .	3	3	–	–	Fair, .	Provide water-closet, . . .	*–
National Underwear Company, .	Ladies' underw'r,	2	4	–	–	Good, .	Provide water-closet, . . .	Complied.
F. C. Friegang & Sons, . .	Window shades, .	4	–	–	–	Good, .	None, ...	–
W F. Schraft, ...	Confectionery, .	9	15	–	–	Fair, .	None, ...	–
D. Kirkwood, ...	Guns, . . .	4	1	1	–	Fair, .	None, ...	–

* Occupant moved.

DISTRICT No. 3 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
James Drew,	Clothing,	9	2	–	–	Fair,	Provide water-closet,	Complied.
Mary A Quill,	Vests,	–	13	–	–	Fair,	Provide water-closet,	Complied
Broad Gauge Iron Works,	Fittings,	11	–	–	–	Good,	None,	–
W. R. Schaeffer & Sons,	Firearms,	10	–	–	–	Good,	None,	–
F. Shields,	Clothing,	2	12	–	–	–	Provide water-closet,	–
John Lamont,	Clothing,	1	15	–	–	Fair,	Provide water-closet,	–
C E. Hill,	Clothing,	2	1	–	–	Fair,	Provide water-closet,	–
C. F. Shrouds,	Feather dusters,	5	30	–	–	Fair,	Provide water-closet,	–
Bailey & Rankin,	Carpets,	15	2	–	–	Good,	None,	–
Mariner & Co.,	Hats,	8	7	–	–	Good,	None,	–
Wise, Harris & Co.,	Cigars,	9	4	–	–	Fair,	Provide water-closet,	Complied.
H. G. Moulton,	Shoes,	16	4	–	–	Fair,	Designate water-closet,	Complied.
H. McCall,	Clothing,	9	5	–	–	Fair,	Provide water-closet,	Complied.
Shooting and Fishing Co.,	Newspapers,	8	1	–	–	Fair,	None,	–
Read's Mercantile Agency,	Mercantile ag'cy,	8	4	–	–	Fair,	Provide water-closet,	Complied.
A. C. Lunfield,	Clothing,	8	2	–	–	Fair,	Designate water-closet,	Complied.
Michael Barrow,	Clothing,	18	17	–	–	Fair,	None,	–
Morris Levi,	Clothing,	12	28	–	–	Fair,	None,	–
M. Mowcles,	Clothing,	2	2	–	–	Fair,	Provide water-closet,	Complied.
John Holman,	Bedding,	25	15	–	–	Fair,	None,	–
N. E. Furniture Exchange,	Furniture,	1	2	–	–	Good,	None,	–
W. E. Bowker,	Fancy,	1	3	–	–	Good,	None,	–
G. W. Lammett,	Mattresses,	30	30	–	2	Fair,	None,	–

M. A. Byrnes,	Millinery,	–	4	–	–	Fair,	None,	–
A. W. Wheeler & Co.,	Curled hair,	9	5	–	–	Fair,	Provide water-closet,	Complied.
A. L. Haskell,	Feathers,	16	8	–	–	Fair,	None,	–
Charles A. Brackett,	Paper boxes,	20	30	–	–	Fair,	None,	–
C. M. Hughes,	Fancy,	2	3	–	–	Fair,	None,	–
L. B. Gatcomb,	Musical,	8	–	–	–	Fair,	None,	–
J. W. Stamford & Co.,	Glass,	4	6	–	–	Fair,	None,	–
B. F. Quimby & Co.,	Brushes,	3	1	–	1	Fair,	None,	–
W. A. Thomas & Co.,	Screws,	7	–	–	–	Fair,	None,	–
Louise Martins,	Clothing,	3	11	–	–	Fair,	None,	–
Redding Electric Company,	Electric,	10	–	–	1	Fair,	None,	–
Bay State Furniture Company,	Furniture,	17	3	–	–	Fair,	None,	–
George C. Goodwin & Co.,	Drugs,	25	5	–	–	Good,	None,	–
A. B. Poole,	Bonnets,	4	8	–	–	Good,	Provide water-closet,	Complied.
Sarah E. Bibron,	Dresses,	–	5	–	–	Good,	None,	–
Coleman & Son,	Hats,	6	1	–	1	Good,	None,	–
J. C. Pushee & Sons,	Brushes,	35	30	3	3	Good,	None,	–
A. L. Russell,	Electric,	18	–	–	–	Good,	None,	–
Atlantic & Pacific Tea Company,	Teas,	12	2	–	–	Fair,	Provide water-closet,	Complied.
D. Toy,	Clothing,	5	10	–	1	Good,	None,	–
James Hauvahan,	Clothing,	2	2	–	–	Fair,	Provide water-closet,	Complied.
Forbes, Haywood & Co.,	Confectionery,	100	125	–	–	Good,	None,	–
M. D. Jones,	Iron fittings,	3	–	–	1	Fair,	None,	–
American Steam Gauge Company,	Gauges,	52	–	–	–	Fair,	None,	–
John W. Lufkin,	Buttonhole machinery,	5	–	–	–	Fair,	None,	–
F. L. Goldsmith,	Jig sawing,	9	–	–	–	Fair,	None,	–
A. L. Hoxie,	Soap,	4	–	–	–	Fair,	None,	–
Automatic Gas Lighting Co.,	Gas lighters,	4	–	–	–	Fair,	None,	–
A. N. Wheeler,	Dyes,	7	–	–	–	Fair,	None,	–
Hoyt & Tripp,	Patterns,	3	–	–	–	Fair,	None,	–

DISTRICT NO. 3 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
L. D Shaw,	Elevators,	4	–	–	–	Fair,	None,	–
Boston Dye Company,	Dyes,	10	–	–	–	Fair,	None,	–
G. W. Moore,	Piano hardware,	8	–	–	–	Fair,	Keep closet clean,	Complied.
Barton & Co.,	Machinery,	3	–	–	–	Fair,	None,	–
E. Schoeflin & Co.,	Picture frames,	10	–	–	1	Fair,	Keep closet clean,	Complied.
H. M. Davis,	Laundry,	2	7	–	–	Fair,	None,	–
G. W. Stevens,	Machinery,	8	–	–	–	Fair,	None,	–
Globe Nickel Company,	Plating,	6	–	–	–	Fair,	None,	–
Belvidere Manufacturing Co,	Shoe linings,	1	8	–	–	Fair,	None,	–
C H. Cadieu,	Dyes,	10	–	–	–	Poor,	None,	–
W. C. Brooks,	Clothing,	6	2	–	–	Fair,	Provide water-closet,	Complied.
Bowker, Torrey & Co,	Marble,	150	–	–	–	Fair,	None,	–
James W. Tufts,	Soda fountains,	430	20	–	–	Good,	None,	–
W. S. Manning,	Machinery,	3	–	–	–	Fair,	None,	–
Charles H. Fogg,	Harness,	10	–	–	–	Fair,	Keep closet clean,	Complied.
Troy and St. James' Laundry,	Laundry,	5	95	–	–	Fair,	Post time-table notices,	Complied.
John P Howard,	Brass finishing,	3	–	–	–	Fair,	None,	–
B. F Richardson,	Musical stands,	4	–	–	–	Fair,	None,	–
Boston Nickel Plate Company,	Plating,	30	–	–	–	Fair,	None,	–
Horgan & Lovell,	Copper and brass,	12	–	–	–	Fair,	Keep closet clean,	Complied.
Copeland Manufacturing Co.,	Machinery,	6	–	–	–	Fair,	None,	–
E. B. Stillings,	Printing,	40	11	–	1	Good,	Post time-table notices,	Complied.
Copeland & Co.,	Machinery,	34	1	–	–	Fair,	None,	–

S B. Wright & Co.,	Perfumery,	4	5	–	–	Fair,	Post time-table notices,	Complied.
George Springall & Co,	Harness,	3	–	–	1	Fair,	None,	–
Daniels, Badger & Co.,	Furniture,	30	1	–	1	Good,	None,	–
G B and C. L. Shaw,	Furniture,	60	1	–	–	Good,	None,	–
John & James W. Marshall,	Slippers,	28	12	–	–	Fair,	None,	–
Ford, McQuade & London,	Boots and shoes,	24	6	–	–	Fair,	None,	–
Henry I Marshall,	Printer,	6	–	–	–	Fair,	None,	–
James Ireland,	Safes,	2	–	–	–	Fair,	None,	–
G. A. Walker,	Machinery,	15	–	–	–	Fair,	None,	–
John E. Rice,	Glass,	3	–	–	–	Fair,	None,	–
John Holt,	Silver plater,	3	–	–	1	Fair,	None,	–
Weeks Manufacturing Company,	Novelty,	10	–	–	–	Fair,	None,	–
F. E Whitney,	Machinery,	8	–	–	–	Fair,	None,	–
Dame & Griffiths,	Patterns,	5	–	–	–	Fair,	None,	–
Joseph Cogan,	Saddlery,	7	2	–	–	Fair,	None,	–
The Electric Manufacturing Co,	Machinery,	9	1	–	–	Fair,	None,	–
Boston Sock Lining Company,	Linings,	2	8	–	1	Fair,	None,	–
Enterprise Plating Company,	Plating,	3	–	–	–	Fair,	None,	–
Boston Musical Institute Co.,	Musical instruments,	22	–	–	–	Fair,	None,	–
W P. Phillips,	Brass finishing,	6	–	–	–	Fair,	None,	–
W E Pratt,	Machinery,	4	–	–	–	Fair,	None,	–
G W. Hawes,	Suspenders,	2	5	–	–	Fair,	None,	–
Lane & Jenkins,	Portraits,	–	2	–	–	Fair,	Provide water-closet,	Complied.
D. S. Driscoll,	Saddlery,	3	1	–	–	Fair,	None,	–
E. S. Cabot,	Gold leaf,	6	11	–	–	Good,	None,	–
Levi Boles,	Doors,	30	–	–	–	Fair,	None,	–
John J Helman,	Edge planes,	3	–	–	–	Fair,	None,	–
Suffolk Nickel Plating Company,	Nickle plating,	2	–	–	–	Fair,	None,	–
Elliott Dash Stitching Works,	Dash covers,	4	–	–	–	Fair,	None,	–
Central Ornament'l Glass Works,	Glass,	3	–	–	–	Fair,	None,	–

DISTRICT NO 3 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
A. Leeds,	Wood carving,	5	–	–	–	Fair,	None,	–
F. E Hunt,	Paper boxes,	2	4	–	–	Good,	None,	–
J V. Waldron & Co.,	Harness,	5	–	–	–	Fair,	Post time table,	Complied.
Hermann Davis,	Clothing,	12	13	–	–	Good,	Provide water-closet; post time table notice.	Complied
A. C. Williams,	Clothing,	1	2	–	–	Fair,	Post time table notice,	Complied.
Morris Reardon,	Horse collars,	6	–	–	–	Fair,	None,	–
C. J Holmes,	Atomizers,	2	1	–	–	Fair,	None,	–
J Grundy & Co ,	Brass,	14	1	–	–	Fair,	None,	–
Kimball Shoe Manufg Co ,	Ladies' boots,	20	8	–	–	Fair,	None,	–
Standard Band Instrument Co.,	Instruments,	15	–	–	–	Fair,	None,	–
H E Swift,	Electrical,	28	12	–	–	Good,	None,	–
Boston Cash Indicator,	Indicators,	3	–	–	–	Fair,	None,	–
Gardner, Knapp & Co.,	Patterns,	10	–	–	–	Fair,	None,	–
J. T Cronin,	Printing,	3	–	–	–	Fair,	None,	–
J A. Chabot,	Safes,	8	–	–	–	Fair,	None,	–
John Kuntz,	Trusses,	2	–	–	–	Fair,	None,	–
A A Carey & Leonard,	Saws,	5	–	–	–	Fair,	None,	–
Wm Hall,	Locks,	29	–	–	–	Fair,	None,	–
J W C. Gilman & Co ,	Lithograph,	3	1	–	–	Fair,	None,	–
W. A Snow & Co.,	Ornamental iron,	12	1	–	–	Fair,	None,	–
James Flynn,	Building materials,	14	–	–	–	Fair,	None,	–

Edwin H. Pearson,	Machinery,	6	–	–	–	Fair,	None,	–
A. C. Reed & Co ,	Grocers' supplies,	4	1	–	–	Fair,	None,	–
Kimball Bros.,	Carriages,	22	–	–	–	Fair,	None,	–
Portable Forge Company,	Iron stools,	3	–	–	–	Fair,	None,	–
National Plating Company,	Plating,	4	–	–	–	Fair,	None,	–
S. F. Leech & Co.,	Saw sets,	5	1	–	–	Fair,	None,	–
Ingalls & Kendricken,	Heaters,	35	–	–	–	Fair,	None,	–
West & Franckle,	Cigars,	4	1	–	–	Fair,	None,	–
H. A. Hawleys,	Window shades,	2	–	–	–	Fair,	None,	–
J. W. Colgan,	Harness ornaments,	15	–	–	–	Fair,	None,	–
Dwyer & Co.,	Printing,	8	–	–	–	Fair,	None,	–
I. H. Wiley & Co.,	Painters' supplies,	12	–	1	–	Good,	None,	–
E B. Barnes,	Frames,	9	–	–	–	Fair,	None,	–
Houghton & Dutton,	Candy,	9	3	–	–	Fair,	Post time table,	Complied.
C. J. Raymond,	Show cases,	10	–	–	–	Fair,	None,	–
A. B. Curtis,	Safes and desks,	5	1	–	–	Fair,	None,	–
J. E Carne & Co.,	Billiard tables,	15	1	1	–	Good,	None,	–
Mark W. Crosby & Co.,	Harness,	56	4	1	–	Good,	None,	–
A. & E Benton & Co ,	Brushes,	3	1	–	–	Fair,	None,	–
A. A. Bubier & Co ,	Iron,	3	1	–	–	Fair,	None,	–
H Worcester & Co.,	Brushes,	5	1	1	–	Fair,	None,	–
T. Noonan,	Barbers' supplies,	4	–	2	–	Fair,	None,	–
Patrick Kavannagh,	Clothing,	7	7	2	–	Fair,	Post time table,	Complied.
D. T. Jones & Co.,	Printing,	4	–	–	–	Fair,	Post time table,	–
M. A. Swift & Son,	Paper,	7	1	–	–	Fair,	Post time table,	–
M. A Whalen,	Awnings,	2	2	1	–	Fair,	Keep water-closet clean,	Complied.
L. Ruban,	Clothing,	7	6	–	–	Fair,	Post time table; provide water-closet,	Complied.
J Shannahoffsky,	Clothing,	4	4	–	–	Fair,	Time table; provide water-closet,	Complied.
C. A. Tootman & Co.,	Hats,	2	1	–	–	Fair,	None,	–

DISTRICT NO. 3 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Michael Casey,	Shoes,	2	1	–	–	Fair,	None,	–
F. B. Pierce,	Shoes,	2	–	1	–	Fair,	None,	–
L. Bloom,	Clothing,	7	2	–	–	Fair,	Provide water-closet; post time table,	Complied.
Lappan Brothers,	Wooden ware,	4	–	–	–	Fair,	None,	–
C. W. Spence,	Carpets,	2	3	–	–	Fair,	Post time tables; provide water-closet,	Complied.
Hopkinson & Marden,	Wooden ware,	5	–	–	–	Fair,	None,	–
Walker, Bennett & Co.,	Cigars,	23	12	–	1	Fair,	None,	–
George D. Brown,	Meats,	1	3	–	1	Fair,	Provide water-closet,	Complied.
J. Cavanaro,	Fruit,	6	2	–	–	Fair,	Provide water-closet,	Complied.
Cobb, Bates & Yerxa,	Groceries,	20	3	–	–	Fair,	None,	–
John Tein,	Locks,	7	–	–	1	Fair,	None,	–
Star Clothing Company,	Clothing,	4	–	–	–	Fair,	None,	–
Burdett & Williams,	Hardware,	17	3	–	–	Fair,	Provide water-closet,	Complied.
John Horton,	Clothing,	1	2	–	–	Fair,	None,	–
J. W. Vinal & Co,	Hardware,	9	1	–	1	Fair,	None,	–
F. C. Meaney,	Printing,	8	–	–	–	Fair,	None,	–
Wm. Hall & Co,	Locks,	8	1	–	–	Fair,	None,	–
C. H. Robinson,	Furniture,	20	5	–	–	Fair,	Provide water-closet,	–
James Forgie & Son,	Harness,	25	1	–	–	Fair,	None,	Complied.
Norcross, Mellen & Co.,	Crockery,	37	3	–	–	Fair,	None,	–
B. O. & G. C. Wilson,	Drugs,	8	12	2	–	Good,	None,	–

Hovey & Co.,	Seeds,	2	1	–	–	Fair,	None,	–
New England Farmer's Gazette,	Printing,	2	6	1	–	Good,	None,	–
Lambert Brothers,	Glass,	76	4	–	–	Good,	None,	–
Leopold Morse & Co.,	Clothing,	53	4	–	–	Good,	None,	–
L. C Chase & Co ,	Blankets,	50	50	–	–	Good,	None,	–
A. A. Glass & Co ,	Paper,	9	3	–	–	Good,	None,	–
Wakefield Rattan Company,	Rattan,	23	2	–	–	Good,	None,	–
C. H. Tarbell,	Lamps,	13	2	–	–	Good,	None,	–
Wm. Read & Sons,	Guns,	28	2	–	–	Good,	None,	–
H. A. Hartley & Co.,	Furniture,	49	16	–	–	Good,	Post time table,	Complied.
H. D. Kingmam,	Cutlery,	4	–	–	1	Fair,	None,	–
S. M. Spencer,	Stencils,	14	–	–	–	Fair,	None,	–
Barry, Beal & Co.,	Stationery,	4	2	–	1	Good,	None,	–
Keeler & Co ,	Furniture,	49	–	–	–	Good,	None,	–
Barry & Brown,	Clothing,	4	3	–	1	Fair,	None,	–
J. J. Keefe,	Trunks,	3	–	–	–	Good,	None,	–
G. M. Tuck,	Printing,	2	–	–	–	Good,	None,	–
J. Geo. S McCrillis,	Bedding,	16	9	–	–	Fair,	None,	–
H. W. Bigelow,	Bedsteads,	2	1	–	–	Fair,	None,	–
M. D. Jones & Co.,	Ornamental iron,	3	2	–	–	Good,	None,	–
Central Oil Stove Company,	Stoves,	14	1	–	–	Good,	None,	–
Wadsworth, Howland & Co.,	Paints,	26	4	–	–	Good,	None,	–
B. C. Noyes & Co.,	Furniture,	3	–	–	–	Good,	None,	–
J. S. Trowbridge,	Hardware,	5	1	–	–	Fair,	None,	–
Peabody & Whitney,	Wooden ware,	20	3	2	–	Good,	None,	–
A. H. Davenport,	Furniture,	75	25	–	–	Good,	None,	–
W. D. B. Davis,	Paper boxes,	3	7	–	–	Fair,	Provide water-closet,	Complied.
Whiton & Knight,	Printing,	6	–	–	–	Good,	None,	–
C. R. McHugh,	Shoes,	4	–	–	–	Good,	None,	–
James F. Sears,	Barber,	5	–	–	–	Fair,	None,	–
C. McCosker,	Potographer,	3	1	–	–	Good,	None,	–

DISTRICT NO. 3 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Sawyer, Walbridge & Briggs, .	Furniture, . .	12	2	–	–	Fair, .	None, ...	–
Miller Bros & Co., . . .	Undertaker, .	11	6	–	–	Fair, .	None, ...	–
Whidden, Seavar & Co., . .	Furniture, . .	16	–	–	–	Good, .	None, ...	–
Bragg, Conant & Co., . . .	Minors, . .	7	1	–	–	Good, .	None, ...	–
Wheeler Reflector Company, .	Reflectors, . .	8	1	–	–	Fair, .	None, ...	–
Henry L. Albee & Co., . .	Bedding, . .	5	3	–	–	Fair, .	None, ...	–
H R Gray, ...	Furniture, . .	4	1	–	–	Fair, .	None, ...	–
John Courtin & Co., . . .	Furniture, . .	12	–	–	–	Fair, .	None, ...	–
O'Brien Furniture Company, .	Furniture, . .	3	1	–	–	Good, .	None, ...	–
A. Bi afisky, ...	Clothing, . .	3	1	–	–	Fair, .	None, ...	–
L. Applebaum, ...	Clothing, . .	11	9	–	–	Fair, .	Post time table, ...	Complied.
Peter Miller, ...	Clothing, . .	2	1	–	–	Fair, .	Post time table, ...	Complied.
M. Goldberg, ...	Clothing, . .	21	9	–	–	Fair, .	Post time table, ...	Complied.
E. J. Poninqisky, ...	Clothing, . .	3	3	–	3	Fair, .	Post time table, ...	Complied.
McDonald, Perkins & Co., . .	Candy, . .	25	75	3	4	Fair, .	Post time table, ...	Complied.
G. F. Conner & Co., . . .	Bed springs, .	15	–	–	–	Fair, .	None, ...	–
Jenkins Bros & Co., . . .	Undertakers' supplies, . .	9	5	–	–	Good, .	None, ...	–
Park Manufacturing Company, .	Inspirators, . .	8	–	–	–	Good, .	None, ...	–
S C. Small & Co., . . .	Furniture, . .	18	2	–	–	Good, .	None, ...	–
E A. Harper & Co., . . .	Furniture, . .	18	–	–	–	Good, .	None, ...	–
Wise, Morse & Co., . . .	Glass, . . .	7	1	–	–	Good, .	None, ...	–
H. Lovering & Co., . . .	Glass, . . .	6	–	–	–	Good, .	None, ...	–

J. E. Gill & Co.,	Harness,	9	–	–	–	Good,	None,	–
J. S. Mason & Co.,	Iron plates,	3	–	–	–	Good,	None,	–
Daley & Co ,	Leather,	2	–	–	–	Fair,	None,	–
Francis Pendergrast,	Leather collars,	2	–	–	–	Good,	None,	–
M. J. Donahue,	Harness,	2	–	–	–	Good,	None,	–
Stein Manufacturing Company,	Undertakers' supplies,	5	25	–	–	Good,	None,	–
Palmer, Parker & Co.,	Veneering,	6	–	–	–	Fair,	None,	–
S. D. Hicks & Son,	Plumbers,	74	1	–	–	Fair,	None,	–
J. W. Glynn,	Plumbers,	2	–	–	1	Fair,	Certificate for children,	Complied.
Miller & Son,	Candy,	3	–	–	–	Fair,	None,	–
R. F. McGorum,	Brass,	48	–	–	–	Fair,	None,	–
O. J. Holt,	Gold and silver,	3	–	–	1	Fair,	Certificate for children,	Complied.
Braman & Co.,	Upholsterer,	5	–	–	–	Fair,	None,	–
A. D. Puffer & Sons,	Soda fountains,	170	5	–	–	Fair,	None,	–
Electric Cigar Factory,	Cigars,	55	14	–	3	Fair,	Certificate for children; time table notice,	Complied.
Jordan & Christie,	Brushes,	7	23	–	–	Good,	Post time table,	Complied.
Peck Bros. & Co.,	Printing,	12	8	–	2	Fair,	Post time table; certificate for children,	Complied.
J. F. Hodge,	Corks,	6	9	1	–	Fair,	Post time table; certificate for children,	Complied.
Holloway Bros. & Washburn,	Sails,	7		–	–	Good,	None,	–
Louis Nelson,	Various,	3	–	–	1	Good,	None,	–
H. P. Wassatoher,	Cigars,	4	2	–	–	Fair,	None,	–
Commercial Cigar Company,	Cigars,	3	1	–	–	Fair,	None,	–
Spitz & Co.,	Cigars,	11	1	–	–	Fair,	None,	–
F. Abraham,	Cigars,	6	1	–	1	Fair,	None,	–
Boston Confectionery,	Candy,	4	8	–	2	Fair,	Provide water-closet,	–
Hoyt Rubber Company,	Rubber,	2	2	–	1	Fair,	None,	–
P. W. Curry,	Mouldings,	5	–	–	–	Fair,	None,	–

DISTRICT NO. 3 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Philip H. Butler,	Marble,	60	–	–	–	Fair,	None,	–
J. Toy,	Groceries,	3	–	–	1	Fair,	Certificate for children,	Complied.
A. Cuthera,	Cigars,	4	–	–	–	Fair,	None,	–
Gay Bros	Provisions,	4	–	–	1	Fair,	Certificate for children,	Complied.
Gilbridge & Gray,	Agricultural,	3	–	–	1	Fair,	Certificate for children,	Complied.
Parker & Wood,	Agricultural,	33	3	–	–	Good,	None,	–
Joseph Breck & Son,	Agricultural,	38	7	–	–	Good,	None,	–
Schlegel & Fowler,	Agricultural,	4	3	–	–	Good,	None,	–
T. W. Emerson,	Agricultural,	6	10	–	–	Fair,	None,	–
W. M. Rawson,	Agricultural,	4	–	–	1	Fair,	Certificate for children,	Complied.
H. W. Roby,	Provisions,	7	1	–	1	Fair,	None,	–
Joseph Rosenburg,	Clothing,	11	1	–	1	Fair,	None,	–
H. Mayhofer,	Clothing,	12	5	–	2	Fair,	Time table notice; certificate for children; provide water-closet,	Complied.
The Kohiler Stove Company,	Stoves,	4	1	–	1	Fair,	None,	–
S. Levin,	Clothing,	10	3	–	–	Fair,	Provide water-closet,	Complied.
Max Wensham,	Clothing,	3	–	–	–	Fair,	Provide water-closet,	Complied.
Jacob Freakle,	Clothing,	6	4	–	–	Fair,	Provide water-closet,	Complied.
Joe Margolis,	Clothing,	3	4	–	1	Fair,	Provide water-closet,	Complied.
B. Bienberg,	Clothing,	6	1	–	–	Fair,	None,	–
H. Kashuapsky,	Clothing,	4	3	–	–	Fair,	Post time table; provide water-closet,	Complied.

F. Dimase,	Clothing,	14	7	–	–	Good,	Post time table; provide water-closet,	Complied.
S. Brackman,	Clothing,	7	8	–	–	Fair,	Provide water-closet,	Complied.
Isaac Goldberg,	Clothing,	12	3	–	–	Fair,	Provide water-closet,	Complied.
H. Jacobs,	Clothing,	14	6	–	–	Fair,	Post time table; provide water-closet,	Complied.
Frank Cone,	Clothing,	12	4	–	–	Fair,	Provide water-closet; post time table,	Complied.
H. M Polsey,	Candy,	25	25	–	–	Fair,	Post time table; provide water-closet,	Complied.
Bartkienicy & Splitt,	Clothing,	22	22	–	–	Fair,	Post time table,	Complied.
Joseph Norwalsky,	Clothing,	22	8	–	–	Fair,	Post time table,	Complied.
Lyons & Sworsky,	Clothing,	13	40	–	–	Good,	Post time table; certificate for children,	Complied.
Commonwealth Supply Co ,	Clothing,	3	1	–	1	Fair,	Certificate for children,	Complied.
R. & J. Farquahar & Co.,	Agricultural,	9	3	–	1	Fair,	Certificate for children,	Complied.
Wm Underwood & Co.,	Canned meats,	25	20	–	–	Good,	None,	–
H M Hilson,	Tin,	29	1	–	–	Good,	None,	–
Orpen Bros ,	Furniture,	44	1	–	–	Fair,	None,	–
Geo E. Read,	Furniture,	65	–	–	–	Fair,	None,	–
Wilder & Co.,	Furniture,	11	1	–	–	Fair,	None,	–
F. W. Allen,	Furniture,	11	1	–	–	Fair,	None,	–
Boston Upholstering Company,	Furniture,	11	1	–	–	Fair,	None,	–
Geo. F Roach & Co.,	Furniture,	25	–	–	–	Fair,	None,	–
Boston Macaroni Manuf'g Co.,	Macaroni,	4	3	–	–	Fair,	None,	–
Boston News Bureau,	Printing,	35	–	–	19	Fair,	Certificate for children,	Complied.
Swett, Sanborn & Co.,	Cigars,	7	1	–	–	Fair,	None,	–
Silverman & Gerstein,	Ladies' underwear,	3	17	–	–	Fair,	Post time table,	Complied.
G. C Aiken,	Candy,	4	2	–	–	Fair,	None,	–
Paine's Furniture Company,	Furniture,	238	12	2	1	Good,	Certificate for children; post time table,	Complied.

DISTRICT NO. 3 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Concluded.								
Glover & Willcomb,	Feathers,	6	8	–	–	Fair,	Post time table,	Complied.
American Confectionery Co.,	Candy,	10	20	–	–	Fair,	Post time table; provide water-closet,	–
G. A. Gilchrist & Co.,	Jewelry,	30	35	–	–	Fair,	Post time table; certificate for children,	–
Hope Collar Box Company,	Boxes,	2	5	–	–	Fair,	None,	–
N. S. Dickey & Co.,	Candy,	5	10	–	1	Fair,	Post time table,	Complied.
Kalloch Manufacturing Co.,	Bustles,	2	12	–	–	Fair,	Better sanitary conditions,	–
Michael Barron,	Clothing,	24	16	–	1	Fair,	Better sanitary conditions,	–
Boston Potato Chip Company,	Chips,	2	3	–	–	Fair,	None,	–
Gorman Bros.,	Files,	15	1	–	–	Fair,	None,	–
Lombard & Co.,	Frames,	15	–	–	–	Fair,	None,	–
District Telegraph Company,	Messages,	10	–	–	1	Fair,	Certificate for children,	Complied.
Chard & Sylvester,	Cigars,	9	3	–	–	Fair,	Post time table; provide water-closet,	Complied.
C. S. Edgarton & Co.,	Cigars,	7	1	–	–	Fair,	None,	–
F. X. Oberle,	Cigars,	19	5	–	–	Fair,	Provide water-closet; post time table,	Complied.
Western Union Telegraph Co.,	Messages,	69	21	–	1	Fair,	Certificate for children; post time table,	Complied.
R. Ricco & Co.,	Cigars,	4	1	–	–	Fair,	None,	–
Grocers' & Canners' Gazette,	Newspapers,	10	6	–	–	Fair,	Provide water-closet; post time table,	Complied.

H. S. Lombard,	Clothing,	5	1	–	–	Fair,	None,	–
American Net & Twine Co.,	Twine,	5	2	–	–	Fair,	None,	–
I. W. Wheeler & Co.,	Flags,	18	12	–	–	Fair,	Post time table,	Complied.
James Martin,	Flags,	7	15	–	1	Fair,	Post time table,	Complied.
H. & G. W. Lord & Co.,	Twine,	25	150	–	–	Fair,	Post time table,	Complied.
Waitt & Bond,	Cigars,	50	15	–	1	Fair,	Post time table,	Complied.
Thomas Groom & Co.,	Books,	21	5	–	–	Good,	Post time table,	Complied.
Boston Printing and Numbering Company,	Books,	4	7	–	–	Fair,	Post time table,	Complied.
Quinnepiac Company,	Fertilizers,	3	1	–	–	Good,	None,	–
H. W. Tilton & Co.,	Stocks,	3	1	–	–	Good,	None,	–
Boston Copying Company,	Typewriting,	6	1	–	–	Good,	None,	–
W. H Boole & Co.,	Stocks,	4	1	–	–	Good,	None,	–
E. D. Verplanck,	Stocks,	4	1	–	–	Good,	None,	–
Barnard & Stanwood,	Stocks,	4	1	–	–	Good,	None,	–
Ferry & Co.,	Stocks,	3	1	–	–	Good,	None,	–
R. L. Day & Co,	Stocks,	3	1	–	–	Good,	None,	–
Louise Martens,	Vests,	3	16	–	–	Good,	Post time table,	Complied.

DISTRICT No. 4, ... HENRY J. BARDWELL, *Inspector.*

CITY OF BOSTON.								
Boston Button Company,	Cloth-covered buttons,	60	120	–	–	Good,	Certificates for four children; post notices of working hours; designate water closets,	Complied.
Bernstein Electrical Company,	Incandescent lamps, etc.,	50	50	–	–	Good,	Certificates for two children,	Complied.

DISTRICT NO. 4 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Suffolk Manufacturing Company,	Suspenders, .	59	142	–	8	Good, .	Certificates for three children; designate water-closets; guard sewing-machine shafting, . . .	Complied.
Putnam & Co., ...	Mattresses and bedding, . .	40	25	–	4	Good, .	Certificate for one child, . .	Complied.
Boston Shoe Tool Company, .	Shoe tools, . .	18	–	–	–	Good, .	Guard fly-wheel; cover set-screws,	*–
H. O. Lothrop & Co., . . .	Wire ferrules, etc.,	9	–	–	–	Poor, .	Cover set-screws; better sanitary arrangements, ...	Complied.
P. F. Burke, ...	Patent steel toe corks, . .	10	–	–	–	Bad, .	Guard fly-wheel; cover set-screws; better sanitary arrangements, .	Complied.
Compres'd Steel Shafting Wr'ks,	Machine shafting, etc., . .	20	–	–	–	Good, .	Guard fly-wheel; cover set-screws,	Complied.
S. H. L. Pierce, ...	Sash, doors and blinds, . .	40	–	–	–	Poor, .	Guard belt; better sanitary arrangements, ...	Complied.
S. A. Woods Machine Company,	Woodworking machinery, .	200	–	–	1	Good, .	Certificates for three children; post working hours; cover set-screws, ...	Complied.
Lincoln & Dodge, . . .	Iron castings, .	35	–	–	–	Good, .	Guard fly-wheel; cover set-screws,	Complied.
Oakman Manufacturing Co., .	Carboys & other glass goods, .	39	6	–	–	Good, .	Guard fly-wheel; cover set-screws,	Complied.

Shales & May, ...	Furniture, . .	60	–	–	–	Bad, .	Post notice of working hours; cover set-screws; better sanitary arrangements, ...	Complied.
Farwell Brothers, . . .	Kindling wood, .	35	–	–	2	Bad, .	Certificates for two children; post notice of working hours; better sanitary arrangements, . .	Complied.
Smith-Carlton Iron Company, .	Builders' iron work, . .	30	–	–	–	Good, .	Guard three lots of belting; cover set-screws, ...	Complied.
O. M. Whitman & Co., . .	Refrigerators, .	10	–	–	–	Good, .	None, ...	–
P. Lally & Co., ...	Carriages, etc., .	12	–	–	–	Poor, .	Guard two belts; better sanitary arrangements, ...	Complied.
Chas. Holmes Estate, . . .	General machine work, . .	5	–	–	–	Good, .	Cover set-screws, ...	Complied.
Pratt Manufacturing Company, .	Boot and shoe findings; . .	18	–	–	–	Good, .	Cover set-screws, ...	Complied.
Whittier Machine Company, .	Elevators, etc , .	75	–	–	1	Fair, .	Post notices of working hours; cover set-screws, . . .	Complied.
James Russell & Sons, . .	Steam boilers, .	47	–	–	–	Fair, .	Post notices of working hours; cover set-screws, . . .	Complied.
City Iron Foundry, . . .	Machinery, etc., .	22	–	–	–	Fair, .	Guard two lines of belting, . .	Complied.
Wm. P. Stone & Co., . . .	Wagons, sleds, etc., . . .	24	–	–	–	Fair, .	Guard blower-belt; cover set-screws, ...	Complied.
Boston Cordage Company, . .	Cordage, . .	260	200	–	2	Good, .	Cover set-screws, ...	Complied.
Walworth Manufacturing Co., .	Steam and gas-pipe fittings, .	530	–	–	5	Fair, .	Certificates for two children; cover set-screws, ...	Complied.
Standard Sugar Refinery, . .	Sugar, . . .	400	–	–	2	Poor, .	Guard fly wheel; cover set screws; better sanitary arrangements, .	Complied.

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* Partly complied.

DISTRICT NO. 4 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
First Street House (Refinery), .	Sugar, . . .	100	–	–	–	Poor, .	Cover set screws; better sanitary arrangements, ...	Complied.
Moore & Wyman, . . .	Elevators, etc., .	38	–	–	–	Good, .	Guard engine cranks; cover set screws, ...	Complied.
Bay State Belting Company, .	Leather belting, .	12	–	–	–	Good, .	Cover set screws, ...	Complied.
Old Colony R. R. Repair Shops, .	Repairing of rolling stock, .	340	–	–	–	Fair, .	Guard three machines in carpenter's shop; cover set screws, . .	Complied.
South Boston Iron Works, . .	Iron and bronze castings, . .	229	–	–	–	Fair, .	Guard two engines and planer; cover set screws, ...	Complied.
Daniel Russell, ...	Boilers, tanks, etc.,	8	–	–	1	Fair, .	Certificate for one child; guard engine belt; cover set screws, .	Complied.
Antoine Vincent, ...	Carriages, . .	12	–	–	–	Fair, .	None, ...	–
Brooklyn Cooperage Company, .	Sugar barrels, .	155	–	–	1	Bad, .	Certificate for one child; guard crossing machine; better sanitary arrangements, . . .	Complied.
Boston Finishing Works, . .	Finishing cotton and woollen goods, . .	12	–	–	1	Good, .	Guard fan belt; cover set screws, .	Complied.
Standard Fuel & Coal Company,	Compound for fuel, . . .	2	–	–	–	Good, .	Guard main belt and two others, .	Complied.
Towne Manufacturing Company,	Leather board stiffenings, .	45	25	–	–	Good, .	Cover set screws, ...	Complied.

John Elliot,	Woollen shoddy,	4	1	–	–	Fair,	Post notices of working hours; cover set screws,	Complied
Sweatt & Chase,	Metal dealers, etc.,	4	–	–	–	Fair,	None,	–
Geo. Miles,	Steam boilers,	45	–	–	–	Bad,	Post notices of working hours; better sanitary arrangements,	Complied
Steller Electric Company,	Incandescent lamps,	17	–	–	–	Fair,	Guard engine,	Moved.
C. L. Hauthaway & Sons,	Shoe blacking,	6	6	–	–	Fair,	None,	–
Consolidated Electric Manufacturing Company,	Electric supplies,	40	–	–	1	Fair,	Certificate for one child; post notices of working hours; cover set screws,	Complied.
Barlow & Hambergers,	Rags and junk,	10	20	–	–	Poor,	Cover set screws; designate water-closets,	Complied.
Chase & Co., Corporation,	Candy,	50	125	–	–	Good,	Designate water-closets,	Complied.
Boston Antique Glass Company,	Antique and variegated glass,	8	–	–	–	Fair,	None,	–
City Point Works,	Steamships, etc.,	400	–	–	10	Fair,	Certificates for ten children; post notices of working hours; guard several machines,	Complied.
Geo. Lawley & Son,	Yachts and boats,	80	–	–	–	Fair,	Guard hoisting engine,	Complied.
Johnson & Shaw,	Chemicals,	10	–	–	–	Good,	None,	–
Fiske, Coleman & Co.,	Fire brick, tiles, etc.,	80	–	–	–	Fair,	Post notices of working hours; guard two belts; cover set screws,	Complied.
American Steel Car Wheel Co.,	Steel car wheels, etc.,	55	–	–	–	Fair,	Guard fly wheel of one engine; cover set screws,	Complied.
Bay State Iron Company,	Rolling plate,	75	–	–	–	Fair,	Post notice of working hours,	Complied.
A. Hale & Co.,	Sub-marine clothing,	10	–	–	–	Good,	Guard one belt; cover set screws,	Complied.

DISTRICT NO. 4 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
National Plaster Company, . .	Medicinal plastr's,	7	–	–	–	Good, .	None, ...	–
R. S. Hotchkins, ...	Bundle wood, .	10	–	–	–	Bad, .	Provide a new water-closet, . .	Complied.
Suffolk Brewing Company, . .	Lager beer, . .	50	–	–	–	Good, .	Guard engine crank and two dynamos; cover set screws, .	Complied.
Thompson & Baker Coal Co., .	Coal and wood, .	75	–	–	–	Good, .	None, ...	–
Robert Bishop, ...	Cotton waste, etc.,	50	100	–	1	Poor, .	Certificate for one child; guard engine crank and fly wheel; better sanitary arrangements, . .	Complied.
Adams Brothers, ...	Cotton waste, .	5	8	–	–	Good, .	Box one belt; designate water-closets, ...	Complied.
Becker's Troy Laundry, . .	Steam laundry, .	3	9	–	–	Fair, .	Box one belt and pulley, . .	Complied.
Hersey Manufacturing Company,	Water meters, etc.,	65	–	–	–	Fair, .	Post notice of working hours; guard lower wheel of band saw; cover set screws, ...	Complied.
Jenney Manufacturing Company,	Kerosene oil, .	35	–	–	2	Fair, .	Certificates for two children; post notice of working hours, . .	Complied.
New England Adamant Co., .	Adamant wall plaster, . .	10	–	–	–	Fair, .	Cover set screws, ...	Complied.
Eugene Trafton, ...	Planing mill, etc.,	2	–	–	–	Bad, .	Guard counter-shafting of circular saw, ...	Complied.
Bay State Brewery, . . .	Lager beer, . .	45	–	–	–	Fair, .	Guard lower wheel of band saw, .	Complied.
Boston Beer Company, . .	Lager beer, . .	40	–	–	–	Fair, .	None, ...	–
Charles L. Storrs, . . .	*–	3	1	–	–	Fair, .	None, ...	–

Felton & Son,	New Engla'd rum,	7	–	–	–	Fair,	None,	–
Patrick F. Shevlin,	Bottling beer,	9	–	–	–	Good,	Post notice of working hours,	Complied.
Henry Dahl,	Leather,	55	–	–	–	Poor,	Post notices of working hours,	Complied.
Broadway Crystal Laundry,	Laundry,	1	5	–	–	Poor,	Post notices of working hours; provide better sanitary arrangements,	Complied.
A. C. Richmond,	Derricks,	3	–	–	–	Fair,	Box main belt; guard lower wheel of band saw; cover set screws,	Complied.
John Souther & Co.,	Steam excavators,	12	–	–	–	Poor,	Cover set screws; provide better sanitary arrangements,	Complied.
Phipps & Crooker,	Renovating cott'n,	15	2	–	–	Fair,	Guard fly wheel and one belt; post notice of working hours.	†–
Laurence H. Daloz,	Dyeing & cleansing,	6	15	–	–	Good,	Post notices of working hours,	Complied.
Novelty Wire Works,	Wire goods,	15	–	–	1	Poor,	Certificate for one child; post notice of working hours; guard counter-shafting; provide better sanitary arrangements,	Complied.
Trip Manufacturing Company,	Machinery,	7	–	–	–	Fair,	Cover set screws; better sanitary arrangements,	Complied.
Chas. W. Robbins,	Spring beds,	10	–	–	–	Fair,	Post notice of working hours,	Complied.
Chas. E. Cummings & Co.,	Desks and cabinet furniture,	35	–	–	–	Fair,	Guard counter-shafting of two machines; cover set screws,	Complied.
McNeil Brothers,	Inside wood finish,	50	–	–	–	Good,	Box counter-shafting of two machines,	Complied.
Geo. E. Tidd,	Printing,	2	1	–	–	Fair,	Post notice of working hours; cover set screws,	Complied.
C. M. Bugbee & Co.,	Sash and doors,	12	–	–	–	Good,	Box lower wheel of band saw,	Complied.
Edward Lynch,	Stairs,	25	–	–	–	Good,	None,	–
Trustees of Bufford Sons Lithograph Company,	Lithographs,	60	20	–	–	Good,	None,	–

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* Newspaper and job printing.

† Factory being refitted.

DISTRICT No. 4 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Atlantic Dye Wood Company,	Dye stuffs,	32	–	–	–	Fair,	None,	–
American Arms Company,	Guns & revolvers,	83	–	–	–	Fair,	Post notices of working hours; guard one belt,	Complied
Potter & Wrightington,	Canned goods,	43	60	–	–	Fair,	None,	–
C. W. York & Co.,	Kindl'g wood, etc.,	6	–	–	–	Fair,	Post notice of working hours; guard belt to circular saw,	Complied.
Oriental Brass Foundry,	Brass castings,	10	–	–	–	Fair,	None,	–
The Atlantic Works,	Steam yachts, etc,	200	–	–	–	Good,	Box lower wheel of band saw; cover set screws,	Complied.
Thomas F. Brown,	Chairs,	2	–	–	–	Fair,	Guard several machines; cover set screws,	Complied.
L. L. Hoyt,	Chairs,	3	–	–	–	Fair,	Guard several machines; cover set screws,	Complied.
Geo. W. Adams & Co.,	Stairs,	10	–	–	–	Fair,	Guard moulding machine; cover set screws,	Complied.
Alex McLaren,	Doors, sash, etc.,	20	–	–	–	Fair,	Guard moulding machine; box lower wheel of band saw; cover set screws,	Complied.
Joseph Sheridan,	House finish,	4	1	–	–	Fair,	Certificates for two children; post notices of working hours; guard several machines,	Complied.
L. C. Swett & Co.,	Steam carpet cleaning,	2	–	–	–	Fair,	Guard main belt,	Complied.

Crowe & Brown,	Stairs,	6	–	–	–	Fair,	Guard counter-shafting of buzz planer and circular saw; box main belt,	Complied.
Lee Brothers & Co.,	Chamber furniture,	18	–	–	–	Fair,	Guard several machines,	Complied.
Chas. B. Holway,	Zithers,	5	–	–	–	Fair,	Box main belt; cover set screws,	Complied.
Wm. L Sturtevant,	Planing mill,	16	–	–	–	Fair,	Box lower wheel of band saw,	Complied.
Chas. P. Whittle,	Store fixtures, &c.,	21	–	–	–	Fair,	Box small blower-belt; cover set screws,	Complied.
E. Hodge & Co.,	Water towers and steam boilers,	70	–	–	–	Fair,	Guard engine crank and dynamo; cover set screws,	Complied.
Mary E Norton,	Vests,	–	25	–	–	Good,	Post notices of working hours,	Complied.
Emma G Ball,	Vests,	–	7	–	–	Good,	Post notices of working hours,	Complied.
Mary E. Kelleher,	Vests,	–	3	–	–	Good,	Post notices of working hours,	Complied.
Nancy E. Wheaton,	Vests,	–	8	–	–	Fair,	Post notices of working hours,	Complied.
Margaret F. Sweeney,	Vests,	3	12	–	1	Bad,	Certificate for one child; notices of working hours; better sanitary arrangements,	*–
Edgar B. Whitten,	Vests,	1	19	–	–	Fair,	Post notices of working hours,	Complied.
Annie McKie,	Vests,	–	10	–	–	Good,	Post notices of working hours,	Complied.
James Menzies,	Vests,	1	19	–	2	Good,	Certificates for two children; notices of working hours; guard sewing-machine shafting,	Complied.
C. E Stover,	Vests,	–	10	–	–	Fair,	Post notices of working hours,	Complied.
Jennie Lambert,	Vests,	–	6	–	–	Fair,	Post notices of working hours,	Complied.
Clara McKie,	Vests,	–	15	–	–	Good,	Post notices of working hours,	Complied.
Mary A. Sproul,	Vests,	1	4	–	–	Good,	Post notices of working hours,	Complied.
A F. Sparling,	Vests,	–	7	–	–	Good,	Post notices of working hours,	Complied.
Saddie Lambert,	Vests,	–	6	–	–	Good,	Post notices of working hours,	Complied.

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* Partly complied.

DISTRICT NO. 4 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Continued.								
Odessa Elliott,	Vests,	1	24	–	–	Good,	Post notices of working hours,	Complied.
Wm B. Murray,	Vests,	1	34	–	–	Fair,	Post notices of working hours,	Complied.
Bessie Belyea,	Vests,	–	7	–	–	Fair,	Post notices of working hours,	Complied.
Lucy J. Seaver,	Vests,	–	5	–	–	Good,	Post notices of working hours,	Complied.
Lena Evans,	Vests,	3	4	–	–	Fair,	Post notices of working hours,	Complied.
Carrie A. Moreland,	Vests,	–	10	–	–	Good,	Post notices of working hours,	Complied.
Raymond Skate Company,	Roller and ice skates,	40	17	–	9	Poor,	Certificates for children; post notices of working hours,	Complied.
Howard Manufacturing Co.,	Elastic webbing, etc.,	50	250	–	19	Good,	None,	–
Nash Manufacturing Company,	Toys,	4	8	–	2	Good,	Certificates for two children,	Complied.
J. T. Southwick,	Parlor furniture,	12	–	–	–	Fair,	None,	–
Cunningham Iron Works Co.,	Boilers, etc.,	95	–	–	–	Poor,	Post notice of working hours; guard gearing of the "shears;" rail around the blower,	Complied.
Wemyss Bros. & Co.,	Furniture and mantels,	70	–	–	–	Fair,	Guard one belt; cover set-screws,	Complied.
Page & Littlefield,	Stairs & mantels,	60	–	–	–	Fair,	Guard three machines,	Complied.
H Burridge & Co.,	Sash and doors,	3	–	–	–	Fair,	None,	–
A S. Holmes,	Kerosene oil,	6	–	–	–	Bad,	Better sanitary arrangements,	*–
Edmands & Hooper,	Stone ware,	18	–	–	–	Fair,	Post notice of working hours,	Complied.

Geo H. Wood & Co.,	Cement, etc.,	10	2	–	–	Poor,	Post notices of working hours; cover set-screws; provide additional water-closet,	Complied.
Philadelphia & Boston Face Brick Company,	Face and ornamental brick,	35	–	1	2	Good,	Certificate for one child; post notices of working hours; guard fly-wheel and other machinery,	Complied.
Berry & Ferguson,	Sewer and drain pipe,	20	–	–	–	Fair,	None,	–
Palmer, Parker & Co.,	Lumber and veneers,	30	–	–	–	Fair,	Guard engine crank,	Complied.
Bray & Estes,	Fine furniture,	18	–	–	–	Good,	Cover set screws,	Complied.
Orpen Brothers,	Furniture and desks,	8	–	–	–	Good,	Guard engine crank and other machinery,	Complied.
S. J. Sanger,	Leather,	35	–	–	–	Poor,	Guard three belts through floor; cover set screws; better sanitary arrangements,	Complied.
Clark & Smith,	Mahogany and veneers,	10	–	–	–	Good,	None,	–
R. F. Baker,	Machine carpet cleaning,	2	–	–	–	Fair,	None,	–
Dundon Brothers,	Machinery,	4	–	–	–	Fair,	None,	–
J. A. Cilley & Co.,	Furniture,	10	–	–	–	Fair,	None,	–
Morse & Co.,	Brass and iron bedsteads,	25	–	–	–	Fair,	Guard several machines; cover set screws,	Complied.
Harrison Beard & Co.,	Furniture,	30	–	–	–	Fair,	Guard belt and pulley of boring machine,	Complied.

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* Moved away.

DISTRICT No. 4 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Boston — Concluded.								
Robert Webb & Co.,	Black lead,	2	–	–	–	Good,	Guard fly-wheel; cover set screws,	Complied.
Eastman Freight-Car Heater Co.,	Freight-car heaters,	18	–	–	–	Fair,	Guard fly-wheel,	Complied.
Kimball Manufacturing Co.,	Wooden ware,	35	–	–	–	Good,	None,	–
Haley & Cutter,	Trunks and bags,	30	10	–	–	Fair,	None,	–
S. Wing & Co.,	Photographic materials,	4	2	–	–	Good,	None,	–
Walter Baker & Co.,	Chocolate,	220	179	–	–	Good,	None,	–
Eagle Paper Mill,	Book paper,	42	23	–	–	Good,	None,	–
Putnam Nail Company,	Horse-shoe nails,	180	150	–	–	Good,	None,	–
Jennie Pike,	Vests,	–	12	–	–	Fair,	Post notices of working hours; separate water-closets,	Complied.
A. G. Stearns Lumber Company,	House finishings,	75	–	–	–	Fair,	None,	–
Darius Eddy,	Refrigerators,	50	–	–	–	Good,	None,	–
Edgar P Lewis,	Confectionery,	8	8	–	–	Good,	Post notices of working hours,	Complied.
Maverick Oil Co. (can shop),	Tin cans,	27	2	–	–	Good,	None,	–
Clara Merrill,	Vests,	–	17	–	–	Good,	None,	–
Emery & Preble,	Ship blacksmiths,	6	–	–	–	Fair,	Guard fly-wheel and main belt,	Complied.
Bardwell, Anderson & Co.,	Tables, sideboards & desks,	150	–	–	–	Good,	None,	–
Central Iron Foundry,	Hot water heaters,	180	–	–	–	Fair,	None,	–
New England Pottery Company,	Table and fancy ware,	59	11	–	–	Good,	None,	–

A. B. Porter,	Finishing leather,	10	–	–	–	Good,	Guard fly wheel and main belt,	Complied.
Waverley Magazine,	Newspaper,	4	16	–	–	Good,	None,	–
American Preserves Company,	Preserves,	7	4	–	–	Good,	None,	–
C. B. Goodrich,	Crackers and biscuits,	22	10	–	–	Good,	None,	–
Davidson Rubber Company,	Rubber goods,	79	44	–	–	Good,	None,	–
Hodges & Mansur,	Crackers and biscuits,	50	20	–	–	Good,	None,	–
Stickney & Poor,	Spices, etc.,	20	25	–	–	Good,	None,	–
H. E. Wright,	Milk cans,	24	–	–	–	Fair,	Guard fly wheel and main belt,	Complied.
J. L. Reed & Co.,	Dyeing and cleansing kid gloves,	3	21	–	–	Good,	Post notices of working hours,	Complied.
Crosby Steam Gage Company,	*–	112	3	–	–	Good,	Post notices of working hours,	Complied.
J. Palmer's Carriage Spring Manufactory,	Carriage springs,	15	–	–	–	Fair,	Guard fly wheel and main belt,	Complied.
Barrett Bros.,	Dyeing and cleansing,	35	25	–	–	Fair,	Designate water-closets, and keep them clean,	Complied.
CITY OF CHELSEA.								
A. S. Rogers Shoe Company,	Children's and misses' shoes,	60	40	–	3	Poor,	Certificates for children; better sanitary arrangements,	†–
Mechanic's Shirt Company,	Shirts & overalls,	2	23	–	–	Good,	Post notices of working hours; designate water-closets,	Complied.
Chelsea Manufacturing Company,	Suspenders,	2	33	–	–	Good,	None,	–
Sawyer's Crystal Blue Company,	Bluing and blacking,	10	5	–	–	Good,	None,	–
Henry Mason.	Newspaper and printing,	6	3	–	–	Good,	Post notices of working hours,	Complied.
Lizzie D. Clark,	Vests,	3	9	–	–	Good,	None,	–

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* Steam gauges and valves.

† Partly complied.

DISTRICT NO. 4 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Chelsea — Continued.								
E. L. and F. S. Rollins,	Window shades,	7	3	–	–	Good,	None,	–
William T. Cardy,	Paper boxes,	4	16	–	–	Good,	None,	–
Anderson Bros.,	Cedar and spruce baskets,	9	3	–	–	Good,	Guard shaft, pulley and belt to circular saw,	Complied.
H. Foye,	Vests,	3	23	–	–	Good,	None,	–
D. and L. Slade & Co ,	Spices, etc ,	4	6	–	–	Good,	None,	–
George F. Slade,	Cigars and cigarettes,	6	4	–	–	Good,	None,	–
Thomas Martin & Bro. Manufacturing Company (Mill A),	Elastic webbing,	20	140	–	–	Good,	None,	–
Thomas Martin & Bro. Manufacturing Company (Mill B),	Elastic webbing,	10	60	–	–	Good,	None,	–
Thomas Martin & Bro. Manufacturing Company (Mill C),	Elastic gussets,	50	20	–	1	Good,	None,	–
Suffolk Cordage Company,	Cordage,	105	45	–	5	Good,	Certificates for children,	Complied.
Charles H. Newell & Co.,	Mattresses and bedding,	8	8	–	1	Good,	Certificates for children,	Complied.
Thomas Strahan & Co.,	Wall paper,	40	–	–	10	Good,	Certificates for eleven children; guard main belt; cover set screws,	Complied.
Steel Edge Stamping and Retinning Company,	Tinware, etc.,	110	50	–	18	Fair,	Certificates for nine children; post notices of working hours,	Complied.

Forbes Lithograph M'f'g. Co., .	Lithographing and printing, .	400	75	–	5	Good, .	Certificate for one child; designate water-closet, ...	–
American Fuel Company, . .	Gas for fuel, .	3	–	–	–	Fair, .	None, ...	–
Perry & Cook, ...	Stairs and office work, . .	5	–	–	–	Fair, .	Box planer belt; cover set screws,	Complied.
T. H. Buck & Co., . . .	Wood finish for houses, . .	22	–	–	–	Fair, .	None, ...	–
Rikeman & Rouse, . . .	Parlor and hall furniture, .	35	–	–	–	Good, .	Guard boring machine and shafting near it, ...	Complied.
F. P. Baker Moulding Company,	Picture mould'gs,	40	–	–	–	Poor, .	Cover set screws; better sanitary arrangements, ...	Complied.
Magee Furnace Company, . .	Stoves, furnaces, etc, ...	280	–	–	–	Fair, .	Guard blower belts; cover set screws, ...	Complied.
Austin & Graves, . . .	Crackers and ship bread, . .	15	5	–	–	Fair, .	Guard fly wheel; cover set screws; better sanitary arrangements, .	Complied.
White, Holman & Co., . .	Chairs, . .	50	–	–	1	Good, .	Guard sand-papering machine; cover set screws; certificate; post notices of working hours, . .	Complied.
L. K. Husted, ...	Steam laundry, .	2	26	–	–	Fair, .	Post notices of working hours; guard sundry machines, . .	Complied.
Standard Elastic Fabric Co., .	Elastic webbing for shoes, .	4	1	–	–	Fair, .	Post notices of working hours, .	Complied.
Boston Basket Company, . .	Splint baskets, .	8	2	–	–	Fair, .	Post notices of working hours, .	Complied.
A. D. Black, ...	Steam carpet cleaning, . .	8	–	–	–	Poor, .	Better sanitary arrangements, .	Complied.
O. C. Magoon & Co, . . .	Machinists tools, etc., . . .	3	–	–	–	Fair, .	Guard one belt through floor, .	Complied.

DISTRICT NO. 4 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Chelsea — Concluded.								
Geo. D. Emery,	Mahogany,	60	–	–	1	Fair,	Certificate for one child; post notices of working hours; guard sundry machines,	Complied.
Daniel Cahlane,	Tanner and furrier,	11	–	–	–	Fair,	Post notices of working hours,	Complied.
Henry F. Dearbon,	Overalls, etc.,	1	9	–	–	Fair,	Post notices of working hours; guard sewing-machine shafting; designate water-closets,	Complied.
U. S. Foundry Company,	Window weights,	27	–	–	–	Bad,	Guard fly wheel and crank; better sanitary arrangements,	Complied.
A. A. White & Co.,	Varnishes and paints,	5	–	–	–	Fair,	Guard fly wheel,	Complied.
Geo. E. Downs,	Salt,	6	3	–	–	Fair,	None,	–
Thomas L. Appleton,	Planes,	15	–	–	–	Fair,	Guard fly wheel and main belt,	Complied.
P. T. McDonough,	Leather,	18	–	–	–	Fair,	Guard fly wheel,	Complied.
James Porter,	Leather,	10	–	–	–	Fair,	Cover set screws,	Complied.
Samuel Cabot,	Lampblack,	23	–	–	2	Fair,	Certificates for two children; post notices of working hours,	Complied.
J. W. Stickney & Co.,	Whiting,	15	–	–	–	Fair,	Safety appliance on elevator; guard fly wheel and engine crank; cover set screws,	Complied.
Revere Rubber Company,	Rubber belts, hose etc.,	330	20	–	2	Good,	Certificate for one child; cover set screws,	Complied.
American Fire Hose Company,	Fire hose,	7	3	–	–	Fair,	Post notices of working hours,	Complied.

Chelsea Dye House and Laundry,	Laundry,	40	80	–	1	Fair,	Certificate for one child; post notices; guard several machines; designate water-closets,	Complied.
Boston Rubber Company,	Rub'r cloth'g, etc.,	90	160	–	–	Good,	Guard engine crank and sewing-machine shafting; cover set screws,	Complied. Complied.
Peter Smith,	Leather,	3	–	–	–	Fair,	None,	Complied.
J. D. Loftus & Co.,	Curriers' hard grease,	7	–	–	–	Bad,	Better sanitary arrangements,	Complied.
Low Art Tile Company,	Art tiles,	62	8	–	–	Fair,	Certificates for two children; post notices; guard belting; designate water-closets,	Complied.
Chelsea Wire Fabric Rubber Co.,	Mechanical rubber goods,	50	–	–	–	Good,	Guard engine crank,	Complied.
REVERE.								
North Shore Electric Company,	Electric lighting,	15	–	–	–	Fair,	None,	–

DISTRICT No. 5, ... J. B. WILLARD, *Inspector.*

ATHOL.								
L. S. Starrett,	Fine mechanical tools,	45	–	–	–	Fair,	None,	–
Brunell & Van Valkingburg,	Cotton warp,	10	25	–	2	Fair,	None,	–
Hall & Green,	Shoes,	55	25	–	2	Fair,	None,	–
Bates Bros.,	Pocket-books,	25	75	–	–	Good,	None,	–
Athol Paper Box Manufactory,	Paper boxes,	4	11	–	2	Fair,	None,	–
Hapgood & Smith,	Match splints,	35	–	–	1	Fair,	None,	–
Eagle Furniture Company,	Furniture,	10	–	–	–	Fair,	None,	–

DISTRICT NO 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
ASHBURNHAM.								
G. G. Rockwood, ...	Pails and tubs, .	21	–	–	–	Fair, .	Guard to fly wheel, ...	Complied.
O. & A. H Whitney, . . .	Chairs, . .	55	–	–	–	Fair, .	None, ...	–
W. F. Whitney, ...	Chairs, . .	125	10	–	1	Fair, .	Gates to elevator, ...	Complied.
AUBURN.								
Auburn Worsted Company, .	Worsted suitings,	65	25	–	–	Fair, .	None, ...	–
Stoneville Worsted Company, .	Worsted and woolen yarns,	25	100	–	29	Fair, .	None, ...	–
BROOKFIELD.								
Linly Wright & Co., ...	Pottery, . .	20	5	–	–	Fair, .	Additional water-closets, . .	Complied.
Geo. E. Forbes, ...	Pottery and box factory, . .	–	–	–	–	Fair, .	Guard to fly wheel and main belt, .	–
East Brookfield Woolen Co., .	Shoddy, . .	93	7	–	–	Fair, .	Time notices posted, . . .	Complied.
Geo. W. Burt & Co., . . .	Shoes, . . .	38	17	–	5	Fair, .	Gates to elevator, ...	Complied.
J. A. Joselyn, ...	Shoe heels, . .	16	16	–	5	Fair, .	None, ...	–
Geo. W. Burt & Co., . . .	Boots and shoes, .	611	64	–	8	Fair, .	Gears guarded and new rope to elevator, ...	Complied.
BARRE.								
Rogers, Osgood & Co, . .	Straw hats, . .	65	35	–	–	Fair, .	Time notices posted, . . .	Complied.

CHARLTON.								
Spring Brook Mill,	Satinets,	85	40	–	5	Fair,	Crank and fly wheel guarded, and bars to outside hoistways,	Complied.
Copp's Mill,	Satinets,	15	15	–	–	Fair,	Fly wheel guard,	Complied.
CLINTON.								
Bigelow Carpet Company,	Carpets,	500	500	–	69	Good,	Four elevators repaired,	Complied.
Gibbs Loom Harness & Reed Co.,	Harness & reeds,	23	12	–	–	Fair,	Time notices posted,	Complied.
DOUGLAS.								
American Axe and Tool Co.,	Axes and tools,	260	–	–	–	Fair,	Elevators repaired and safety catches,	Complied.
DANER.								
Crawford & Tyler,	Woollen goods and satinets,	28	12	–	–	Good,	None,	–
CITY OF FITCHBURG.								
Fitchburg R.R. Repair Shop,	Repairing and building cars,	300	–	–	–	Good,	None,	–
Falulah Paper Company,	Paper,	22	–	–	–	Fair,	Guard to crank and fly wheel,	Complied.
Beoli Mills,	Worsted coatings,	192	188	–	23	Good,	Chain to elevator,	Complied.
Fitchburg Machine Works,	Metal working machinery,	90	–	–	–	Fair,	Fly wheel guard,	Complied.
C. H. Brown & Co,	Steam engines,	40	–	–	–	Fair,	Crank, fly wheel, belts and gears guarded,	Complied.
Nial Davis,	Builders' supplies,	35	–	–	–	Fair,	None,	–
Simonds Manufacturing Co.,	Saws and planer knives,	160	–	–	–	Fair,	None,	–

District No. 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Fitchburg — Concluded.								
Park Hill Manuf. Co. (Mill A), .	Ginghams, . .	175	175	5	46	Fair, .	Safety catches to elevator repaired,	Complied.
New England Knitting Mill, .	Ladies' knitted underwear, .	20	80	–	4	–	Main belt and pulley guarded; additional water-closets, . . .	Complied.
Crocker, Burbank & Co, . .	Paper pulp, . .	8	–	–	–	–	Safety catches to elevator, . .	Complied.
Fitchburg Manufacturing Co., .	Ginghams, . .	45	55	–	–	–	Time notices posted, . . .	Complied.
Gardner.								
F. W. Smith.	Silver ware, .	38	2	–	–	Fair, .	None, ...	–
P. Derby & Co, ...	Chairs, . .	125	15	–	–	Fair, .	Belts and stairways guarded, . .	Complied.
J. A Dunn, ...	Chairs, . .	80	–	–	–	Fair, .	Belts guarded, ...	Complied.
E Wright & Co., ...	Chairs, . .	35	–	–	–	Fair, .	Fly wheel guarded, . . .	Complied.
Gardner Egg Carrier, . . .	Eddy patent egg carrier, . .	8	2	–	–	Fair, .	None, ...	–
Wright & Read, ...	Chairs, . .	30	–	–	–	Fair, .	Elevator repaired, ...	Complied.
Hardwick.								
George H. Gilbert Mfg. Company,	Ladies' woollen dress goods, .	405	220	–	64	Fair, .	Elevator safety catches repaired, .	Complied.
Hubbardston.								
H. W. Howe, ...	Saw mill and box manufactory, .	20	–	–	–	Fair, .	None, ...	–

LEOMINSTER.								
C. J Cobley,	Piano cases,	100	–	–	–	Fair,	Crank and fly wheel guarded,	Complied.
J. H. Lockley,	Piano cases,	35	–	–	–	Fair,	Fly wheel guarded; cut-off gears boxed,	Complied.
Harwood Manufacturing Co.,	Leather board,	46	–	1	3	Fair,	Belts boxed; time notices,	Complied.
Leominster Shirt Company,	Shirts,	20	130	–	2	Fair,	None,	–
Bay State Shirt Company,	Shirts,	3	122	–	2	Fair,	None,	–
Wachusett Shirt Company,	Shirts,	10	540	–	2	Fair,	None,	–
LEICESTER.								
A Howarth & Son,	Fancy flannels,	48	27	–	–	Fair,	None,	–
E. G. Carlton & Son,	Fancy flannels,	16	14	–	1	Fair,	None,	–
Newton Darling Mill,	Satinets,	21	14	–	–	Fair,	None,	–
NORTHBRIDGE.								
Linwood Mill,	Cotton cloth,	90	100	3	16	Good,	Safety catches to elevator repaired,	Complied.
Paul Whitin Manufacturing Co,	Cotton cloth,	225	175	–	39	Good,	Crank and fly wheel guarded; safety catches to elevator,	Complied.
NORTH BROOKFIELD.								
E. & A. H. Batchellor,	Boots and shoes,	500	150	–	23	Fair,	Crank and fly wheel guarded, and shafting guarded,	Complied.
H. H. Brown & Co,	Boots and shoes,	45	15	–	7	Good,	Fly wheel guarded, and gates to elevator,	Complied.
OXFORD.								
Bernon Mill,	Satinets,	35	13	–	–	Fair,	None,	–
SOUTHBRIDGE								
Hamilton Mills Company,	Woollen goods,	18	57	3	4	–	Safety catches to elevator,	Complied.

DISTRICT NO. 5 — *Continued.*

NAME OF FACTORY OR WORKSHOP	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
SPENCER.								
Prouty Bros,	Boots and shoes,	42	7	–	–	Fair,	Safety catches to elevator,	Complied.
Bacon & Libby,	Boots and shoes,	110	15	–	4	Fair,	Safety catches to elevator and car repaired,	Complied.
J. Green & Co,	Boots and shoes,	40	10	–	–	Fair,	Safety catches to elevator,	Complied.
UXBRIDGE.								
Uxbridge Cotton Mill,	Fine sheeting,	60	74	4	9	Fair,	Safety catches to elevator, and general repairs,	Complied.
WEBSTER.								
A. J. Bates,	Shoes,	120	30	4	7	Fair,	Time notices; school certificates,	Complied.
H. N. Slater Cambric Mill,	Cambrics,	115	35	1	14	Fair,	Driving pulleys guarded,	Complied.
WESTBOROUGH.								
H. O. Bernard Manufg. Co.,	Straw goods,	133	367	–	2	Fair,	Safety catches to elevator,	Complied.
Gould & Walker,	Boots and shoes,	200	75	–	18	Fair,	Elevator well sheathed,	Complied.
Westborough Boot and Shoe Manufacturing Company,	Boots and shoes,	4	8	–	1	Fair,	None,	–
WEST BROOKFIELD.								
W. K. Lewis & Bros.,	Condensed milk,	7	–	–	–	Good,	None,	–
H. M. Tower,	Paper boxes,	8	3	–	–	Fair,	Time notices; additional water-closets,	Complied.

WINCHENDON.								
Glen Allen Mill,	Blue drilling,	52	48	–	11	Fair,	Repair safety catches to elevator,	Complied.
Raymond & Rice,	Chair seats and blinds,	34	1	–	2	Fair,	None,	–
M. L. Bartlett,	Knife trays,	12	–	–	3	Fair,	None,	–
Alvin Struter,	Wood working machinery,	6	–	–	–	Fair,	None,	–
William Murdock,	Spools & bobbins,	8	–	–	–	Fair,	None,	–
W. P. Clark & Co ,	Chairs,	25	–	–	–	Fair,	None,	–
E Murdock & Co ,	Tubs and pails,	175	3	–	3	Fair,	Driving belt guarded; time notice posted,	–
W. L. Woodcock & Son,	Pails,	45	2	–	1	Fair,	Main belt guarded; time notice posted,	–
William Brown & Sons,	Tubs and pails,	65	2	1	–	Fair,	Certificate; time notice posted; new ropes to elevator,	–
CITY OF WORCESTER.								
Worcester Collar Laundry,	Laundry,	34	11	–	–	Fair,	Time notices posted,	Complied.
Graton & Knight,	Tannery and shoe stock,	95	5	–	–	Fair,	Doors to open outward,	Complied.
W. H. Burns & Co.,	Ladies' underw'r,	10	290	–	–	Good,	None,	–
F. C. Sessions & Co.,	Coffins & caskets,	20	–	–	–	Fair,	None,	–
F. S. Blanchard,	Job printing,	24	–	–	–	Fair,	None,	–
Ruddy Thread Company,	Thread,	9	18	–	–	Fair,	Pulley and belt to winding well guarded,	Complied.
Hamlin & Russell Manufacturing Company,	Wire goods,	45	30	–	4	Fair,	Time notices posted,	Complied.
Piedmont Mill,	Satinets,	25	20	–	–	Fair,	None,	–
Emerson, Lowe & Barber,	Envelopes,	25	25	–	–	Fair,	Time notices posted,	Complied.
Phenix Plate Company,	Dry plates,	17	3	–	–	Fair,	None,	–
Norton Emory Wheel Company,	Emory wheels,	40	–	–	–	Fair,	Fly wheel guarded; gates to elevator,	Complied.

District No. 5 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Worcester — Concluded.								
G. Henry Whitcomb Envelope Co.,	Envelopes,	45	130	–	–	Good,	None,	–
Wright & Colton,	Wire cloth,	3	–	–	9	Fair,	Selvedge machine guarded,	Complied.
Prentice Bros.,	Machinist's tools,	120	–	–	–	Good,	Crank and fly wheel guarded,	Complied.
Logan, Swift & Brigham,	Envelopes,	135	75	–	5	Good,	None,	–
Worcester Corset Company,	Corsets,	30	320	–	19	Good,	Doors to open outward,	Complied.
Glasgow Thread Company,	Spool cotton,	7	71	–	2	Good,	None,	–
Bay State Shoe and Leather Co.,	Boots and shoes,	250	75	–	9	Fair,	Safety catches to elevators repaired,	Complied.
Mason Brush Works,	Brushes,	10	8	–	–	Fair,	Time notices posted,	Complied.
Barnard, Sumner & Co.,	Dry goods,	88	87	–	34	Good,	None,	–
Rawson Bee Hive,	Wood turning,	15	5	–	2	Fair,	Time notices posted,	Complied.
J. W. Sargent,	Carriage repository,	5	–	–	–	Fair,	Gates to elevator,	Complied.
Park Corset Company,	Corsets,	4	76	–	–	Fair,	None,	–
William Hyland,	Mattresses,	22	8	–	–	Fair,	Time notices posted; water-closet marked,	Complied.
Knowles Loom Works,	Looms,	1000	–	–	4	Good,	Belts guarded; bars to hoistways,	Complied.
Wheelock Engine Company,	Steam engines,	47	–	–	–	Good,	Fly wheel and main belt guarded,	Complied.
J. R. Torrey Razor Company,	Razors and strops,	80	70	–	–	Fair,	Gate unlocked; fire-escape extended to ground,	Complied.
Davis, Cummings & Co,	Boots and shoes,	75	25	–	2	Fair,	Elevator catches repaired,	Complied.
Wright Machine Company,	Cotton & woollen machinery,	25	–	–	–	Fair,	None,	–
Hill Dryer Co,	Clothes dryers,	9	–	–	–	Fair,	None,	–

Park Hosiery Company,	Hosiery,	5	25	–	1	Fair,	None,	–
Coats' Clipper Manufactory,	Horse and barber clippers,	22	–	–	–	Fair,	None,	–
T. K. Earl Manufacturing Co.,	Card clothing,	45	15	–	–	Fair,	Elevator repaired,	Complied.
Coe's Wrench Shop,	Wrenches,	50	–	–	–	Fair,	Fly wheel guard,	Complied.
P. Baker Lead Works,	Lead pipe,	12	–	–	–	Fair,	None,	–
John F. Fowkes & Co.,	Saddlery goods,	6	3	–	3	Fair,	Certificates and time notices,	Complied.
George S. Hatch,	Shoe heels,	4	115	–	14	Fair,	None,	–
F. S. Robbins,	Builders' sup'lies,	16	–	–	–	Fair,	Safety catches to elevator; bars to hoistways,	Complied.
Urjel Jacques,	*–	12	–	–	–	Fair,	None,	–
E. W. Vail Chair Company,	Folding chairs,	50	–	–	–	Fair,	None,	–
Morgan Spring Company,	Steel springs,	100	–	–	5	–	Driving pulley and fly wheel guard,	Complied.
Worcester Bleach & Dye Works,	Bleaching and dyeing,	65	6	–	–	–	Time notices posted,	Complied.

DISTRICT No. 6, ... JAMES MCGRAW, *Inspector*.

ATTLEBOROUGH.								
Horton & Angell,	Jewelry,	97	33	2	3	Good,	None,	–
A. A. Bushee,	Jewelry,	39	21	–	–	Good,	None,	–
W. D. Wilmarth,	Coffin trimmings,	14	13	–	–	Good,	None,	–
Streeter Bros.,	Watch charms,	10	15	–	–	Good,	None,	–
Daggett & Clap,	Jewelry,	80	19	–	–	Good,	None,	–
W. E. Sandford,	Enamelled trimmings,	12	10	–	–	Good,	Time notices,	Complied
Smith. Carpenter & Co.,	Coffin trimmings,	16	8	–	–	Fair,	Time notices; closets designated,	Complied.
W. and S Blackinton,	†–	107	23	–	–	Good,	None,	–

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* Carpenter and builder.

† Ladies' and girls' chains and bracelets.

DISTRICT NO. 6 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Attleborough — Concluded.								
Bates & Bacon,	Watch cases and bracelets,	55	5	–	–	Fair,	None,	–
E. T. Bright,	Enamelling jewelry,	6	3	–	–	Good,	None,	–
Cummings & Wexel,	Jewelry,	40	8	–	–	Good,	None,	–
Bates Button Company,	Collar, cuff and button,	30	14	–	–	Good,	None,	–
Short, Nerney & Co.,	Jewelry and plated chains,	40	14	–	–	Fair,	None,	–
Watson & Newell,	Cuff buttons,	100	50	–	–	Good,	None,	–
Hayward & Sweet,	Jewelry,	25	5	–	–	Fair,	Time notices,	Complied.
R. B. MacDonald,	Jewelry,	5	5	–	–	Fair,	None,	–
G. H. Coggsill & Co.,	Jewelry,	25	4	–	–	Good,	None,	–
Blake & Claflin,	Jewelry,	50	6	–	–	Fair,	Closets designated; time notices,	Complied.
G. A. Dean & Co.,	Jewelry,	70	8	–	–	Fair,	Time notice,	Complied.
Tappan, Berry & Co.,	Jewelry,	70	18	–	–	Good,	Time notice,	Complied.
S. W. Gould & Co.,	Jewelry,	50	10	–	–	Good,	None,	–
E. A. Patten & Co.,	Jewelry,	15	6	–	–	Bad,	Owner of building notified of sanitary condition,	Complied.
Wheaton & Richards,	Jewelry,	9	2	–	–	Fair,	Closets designated; time notices,	Complied.
Smith & Crosby,	Jewelry,	25	4	–	–	Fair,	Closets designated; time notices,	Complied.
F. Sadler & Co.,	Jewelry,	14	4	–	–	Fair,	Closets designated; time notices,	Complied.
E. A. Robinson,	Jewelry,	8	3	–	–	Fair,	Closets designated,	Complied

Marsh & Bigney,	Jewelry,	26	7	–	–	Bad,	Owner of the building notified of the sanitary condition,	Complied.
Bliss Brothers,	Jewelry,	40	8	–	–	Fair,	Closets designated,	Complied.
Regnall, Bigney & Co,	Jewelry,	12	6	–	–	Fair,	Owner of building notified of the sanitary condition,	Complied.
W. H. Wilmarth & Co,	Jewelry,	136	65	–	–	Good,	None,	–
F. W. Weaver & Co.,	Jewelry,	35	15	–	–	Good,	Water-closets designated,	Complied.
J. M. Fisher & Co.,	Jewelry,	48	15	–	–	Good,	None,	–
C A. Wetherell & Co.,	Jewelry,	12	4	–	–	Good,	Time notices,	Complied.
Mechanics' Mill,	Odd cotton cloth,	75	100	10	16	Good,	None,	–
Hebron Manfg. Co, Dodgeville,	Cotton sheeting,	90	110	17	15	Good,	Time notice,	Complied.
Hebron Mfg. Co., Hebronville,	Cotton sheetings and twills,	85	175	16	20	Good,	Time notice,	Complied.
DENNIS.								
Casey Brothers Shoe Co,	Men's and boy's shoes,	75	15	–	–	Good,	None,	–
DIGHTON.								
E. T. Cowdrey & Co.,	Canned beans, tomatoes, peas, etc.,	10	20	–	–	Good,	Time notices,	Complied.
Mount Hope Mill,	Cotton yarn,	25	70	3	6	Good,	None,	–
Dighton Paper Mill,	Paper,	25	–	–	5	Good,	None,	–
Dighton Furnace Company,	Furnaces and stoves,	35	–	–	6	Good,	None,	–
FAIRHAVEN.								
Paulding Shoe Company,	Ladies' boots and shoes,	35	15	–	–	Good,	None,	–
American Tack Company,	Tacks and nails,	180	40	–	–	Good,	Time notices,	Complied.

DISTRICT NO. 6 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
FALL RIVER.								
American Printing Company,	Printing cotton cloth,	525	50	28	12	Good,	Time notices,	Complied.
American Linen Co , No 1 and 2,	Cotton printcloth,	200	800	60	23	Good,	Time notices,	Complied.
Barnaby Manufacturing Co.,	Cotton ginghams,	100	300	6	8	Good,	Time notices; closets designated,	Complied.
Fall River Iron Works Co.,	Cotton print cloths,	200	206	18	10	Good,	None,	–
Metacomet Manufacturing Co.,	Odd cotton cloth,	100	200	10	12	Good,	Closets designated; time notices,	Complied.
Fall River Manufactory,	Cotton print cloths,	150	200	8	14	Bad,	Time notices; sanitary condition,	Complied.
Osborn Mills, No. 1 and 2,	Odd cotton cloth,	400	420	20	22	Good,	Closets designated,	Complied.
Slade Mills,	Print cloth,	189	140	8	12	Good,	None,	–
Laurel Lake Mills,	Odd cotton cloth,	110	190	12	14	Good,	None,	–
Covel & Osborn,	Cotton banding,	17	3	12	3	Good,	None,	–
Shove Mills,	Odd cotton cloth,	260	220	13	20	Good,	None,	–
King Phillip Mills,	Fancy cotton cloth,	500	509	20	23	Good,	None,	–
Cannonicut Mills,	Satines and cambrics,	107	88	10	12	Good,	None,	–
Globe Yarn Mills, No. 1, 2 and 3,	Cotton yarns,	347	328	35	40	Good,	None,	–
Wyoming Mills,	Cotton yarns,	55	75	5	3	Good,	Time notices,	Complied.
Seaconnett Mills,	Cotton print cloths,	150	250	18	9	Good,	Closets designated; elevator repaired,	Complied.

Cornell Mills,	Odd cotton cloth,	175	225	10	4	Good,	None,	
Flint Mills,	Odd cotton cloth,	225	275	30	37	Good,	None,	–
Wampanoag Mills, Nos. 1 and 2,	Cotton print cloth,	350	350	30	21	Good,	Time notices,	Complied.
Barnard Manufacturing Co.,	Print and odd cotton cloth,	170	150	15	10	Good,	None,	–
Hargraves Mills,	Odd cotton cloth,	200	200	14	11	Good,	None,	–
Stafford Mills, Nos 1 and 2,	Cot'n print cloths,	300	350	20	14	Good,	Closets designated,	Complied.
Troy Cotton and Woollen Mfg.,	Odd cotton cloth,	192	188	10	8	Fair,	Closets designated,	Complied.
Chace Mills,	Print cloths,	270	250	20	26	Good,	Closets designated,	Complied.
R. Borden, Manufacturing Co,	Odd cotton cloth,	440	460	18	22	Good,	None,	–
Union Cotton Manufacturing Co.,	Odd cotton cloth,	400	450	30	39	Good,	Closets designated,	Complied.
Jesse Eddy Manufacturing Co.,	Wollen and worsted cloth,	125	50	1	2	Good,	None,	–
Tecumseh Mills, Nos. 1 and 2,	Print cloth,	200	250	20	13	Good,	None,	–
Davol Mills,	Odd cotton cloth,	220	230	10	15	Good,	Time notice,	Complied.
Robeson Mills,	Cotton print cloth,	65	175	5	4	Good,	None,	–
Merchants' Manufacturing Co,	Print cloth and odd cotton cloth,	400	450	34	30	Good,	None,	–
Mechanics' Mills,	Print cloth,	300	250	30	49	Good,	Time notice,	Complied.
Weetamoe Mills,	Print and odd cotton cloth,	175	200	20	13	Good,	None,	–
Narragansett Mills,	Print cloth,	200	225	15	17	Good,	None,	–
Sagamore Manufacturing Company, Nos 1 and 2,	Print cloth,	400	425	30	34	Good,	Closets designated,	Complied.
Border City Manufacturing Company, Nos. 1, 2 and 3,	Odd cotton cloth,	550	550	50	53	Good,	Closets designated; time notice,	Complied.
Crescent Mills,	Fancy cotton cloth,	200	200	14	17	Good,	None,	–
Durfee Mills, Nos. 1 and 2,	Print cloth,	500	550	30	37	Good,	None,	–
Granite Mills, Nos. 1 and 2,	Print and odd cotton cloth,	377	500	13	20	Good,	None,	–

DISTRICT NO. 6 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Fall River — Concluded.								
Fall River Bleachery,	Bleaching cotton cloth,	132	18	13	10	Good,	Time notices,	Complied.
John H. Estes & Brothers,	Wrapping twine, carpet warp and waste,	30	35	–	–	Good,	None,	–
Massasoit Manufacturing Co.,	*–	20	45	–	–	Good,	None,	–
Marshall's Hat Factory,	Men's and ladies' felt and fur hats,	192	65	–	4	Good,	Time notice,	Complied.
Quinn Brothers & Co.,	Boys' and misses' shoes,	20	7	–	–	Good,	None,	–
Charles F. Hill,	Roller covering,	12	4	–	–	Good,	Time notice,	Complied.
Fall River Laundry,	–	21	54	–	–	Good,	Closet to be designated; time notice,	Complied.
FREETOWN.								
Crystal Spring Bleachery,	Bleaching cotton cloth,	100	10	–	–	Good,	None,	–
N. R. Davis & Sons,	Sporting guns,	35	–	1	4	Good,	Time notice,	Complied
MANSFIELD								
Rogers' Hat Factory,	Straw hats,	75	4	–	–	Good,	Repair elevator,	Complied.
Rumsey Brothers,	Ladies' shoes,	60	90	2	3	Good,	Time notice,	Complied.
D. S. Spaulding,	Jewelry,	85	15	–	–	Good,	Time notice,	Complied.

CITY OF NEW BEDFORD.								
Potomska Mills,	Odd cotton cloth,	594	806	39	30	Fair,	Separate water-closets, and designate,	Complied.
Acushnet Mills,	Odd cotton cloth,	510	600	30	32	Good,	Time notice,	Complied.
Hathaway Mill,	Odd cotton cloth,	159	165	14	5	Good,	None,	–
City Mill,	Cotton yarns,	80	128	20	18	Good,	None,	–
Howland Mills, Nos. 1 and 2,	Cotton yarns,	225	300	39	35	Good,	None,	–
New Bedford Manufacturing Company, Nos. 1 and 2,	Cotton yarns,	125	175	31	20	Good,	None,	–
Bennett Manufacturing Co.,	Cotton yarns,	125	125	20	11	Good,	None,	–
Grinnell Manufacturing Co.,	Cotton sheeting, satines, etc.,	300	400	48	30	Good,	None,	–
Wamsutta Manufacturing Company, Nos. 1, 2, 3, 4, 5 and 6,	Sheetings and shirting,	1100	1300	75	126	Good,	Closets to be designated; time notices,	Complied.
Oneka Woollen Mill,	Woollen dress goods,	75	100	–	4	Good,	None,	–
Pairpoint Manufacturing Co.,	Silver plat'd ware,	300	50	2	8	Good,	Closets to be designated; time notice,	Complied.
Mount Washington Glass Co.,	Glass ware,	250	20	4	5	Good,	Time notice,	Complied.
Hathaway, Soule & Harrington,	Men's and boys' boots and shoes,	225	75	–	6	Good,	Time notice,	Complied.
Tinkham & Gifford,	Ladies' & misses' boots and shoes,	35	20	–	2	Good,	None,	–
T. M. Denham & Brother,	Men's shirts,	25	125	–	6	Good,	None,	–
New Bedford Casket Company,	Caskets & coffins,	33	13	–	2	Good,	None,	–
Tinkham & Gifford,	Ladies' & misses' and children's shoes,	30	20	–	–	Good,	None,	–

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* Cotton batting, wrapping twine, etc.

DISTRICT NO. 6 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
NORTH ATTLEBOROUGH.								
J. F. Sturdy & Sons,	Jewelry,	38	18	–	–	Good,	None,	–
W. D. Fisher & Co.,	Jewelry,	40	16	–	–	Good,	None,	–
Gold Medal Braid Company,	Braid,	50	42	4	6	Good,	None,	–
Stanley Brothers,	Jewelry,	20	6	2	3	Good,	None,	–
V. H. Blackenton & Co.,	Jewelry,	18	4	–	–	Good,	Time notices,	Complied.
D. Evans & Co.,	Military buttons,	5	3	–	–	Good,	None,	–
D. F. Briggs & Co.,	Jewelry,	30	15	–	–	Good,	Time notices,	Complied.
R F. Simmons,	Jewelry,	120	30	–	–	Good,	Time notices,	Complied.
F. Mason & Co.,	Jewelry,	10	6	–	–	Good,	None,	–
G. W. Clark & Co,	Jewelry,	40	4	2	–	Good,	None,	–
Mason Jewelry Company,	Jewelry,	8	2	–	–	Good,	None,	–
Soloman Davidson,	Jewelry,	35	10	–	–	Good,	None,	–
Freeman & Co.,	Jewelry,	50	10	–	–	Good,	Time notice,	Complied.
Enterprise Jewelry Company,	Jewelry,	5	2	–	–	Good,	None,	–
Bugbee & Niles,	Jewelry,	26	5	–	–	Good,	None,	–
J. G. Cheever & Co.,	Jewelry,	30	11	–	–	Good,	None,	–
Frank M. Whiting & Co.,	*–	53	2	–	–	Good,	None,	–
Young & Stern,	Jewelry,	40	7	–	–	Bad,	Owner of building notified of sanitary condition,	Complied.
Demerest & Brady,	Jewelry,	15	5	–	–	Good,	None,	–
T. G. Frothingham & Co.,	Jewelry,	17	2	–	–	Good,	None,	–
T. C Somes,	Jewelry,	20	2	–	–	Good,	Time notice,	Complied.
A. H. Bliss & Co.,	Jewelry,	7	6	–	–	Fair,	Time notice,	Complied.

J. E. Draper & Co.,	Jewelry,	40	10	–	–	Bad,	Notified of the sanitary condition of building,	Complied.
H. F. Barrows & Co.,	Jewelry,	90	25	–	–	Good,	Time notice; designate closets,	Complied.
John Bonnett,	Electroplating,	18	2	–	–	Good,	None,	–
J. J. & J. M. Richards,	Jewelry,	12	2	–	–	Good,	None,	–
G. W. Cheever & Co.,	Jewelry,	60	23	–	–	Good,	None,	–
James A. Bartlett,	Jewelry,	2	2	–	–	Good,	None,	–
T. I. Smith & Co.,	Jewelry,	70	15	–	–	Good,	None,	–
H. H. Curtis & Co., and Bay State Silver Plating Co.,	†–	60	15	–	–	Good,	Closets to be designated,	Complied.
H. D. Merritt & Co.,	Jewelry,	50	10	–	–	Good,	Time notice,	Complied.
E. Ira Richards & Co,	Jewelry,	66	12	–	–	Good,	None,	–
A. M. Draper,	Jewelry,	90	50	–	–	Good,	Time notice,	Complied.
G. K. Webster,	Jewelry,	33	6	–	–	Good,	None,	–
R. Blackington & Co.,	Jewelry,	50	10	–	–	Good,	None,	–
E. I. Franklin & Co.,	Jewelry,	70	6	–	–	Good,	None,	–
D. E. Codding & Co.,	Jewelry,	25	7	–	–	Good,	None,	–
S. E. Fisher & Co,	Jewelry,	60	6	–	–	Good,	None,	–
F. S. Gilbert,	Jewelry,	18	4	–	–	Fair,	None,	–
Riley, French & Co,	Jewelry,	75	12	–	–	Good,	Time notices,	Complied.
French & Franklin Manufg. Co.,	Jewelry,	18	4	–	–	Good,	None,	–
Sandland, Capron & Co,	Jewelry,	40	2	–	–	Good,	None,	–
Healy Brothers,	Jewelry,	35	12	–	–	Fair,	None,	–
Adamsdale Mill,	Cotton yarns,	50	35	3	4	Good,	None,	–
Thomas Totten & Co.,	Jewelry,	50	15	–	–	Fair,	None,	–
NORTON.								
Engley, Wetherell & Co.,	Jewelry,	55	30	–	–	Good,	Time notice,	Complied.
A. H. Sweet,	Wood and paper boxes,	53	27	–	–	Good,	None,	–

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* Jewelry and silver ware.

† Jewelry and silver plating.

DISTRICT No. 6 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
ORLEANS.								
Cummings & Howes,	Men's clothing,	90	100	–	–	Good,	None,	–
Snow's Factory,	Men's clothing,	35	10	–	–	Good,	None,	–
PROVINCETOWN.								
Puritan Shirt Company,	Men's white shirts,	5	150	–	–	Good,	None,	–
L. Pickert & Co.,	Canned fish,	25	25	6	–	Good,	None,	–
S. S. Swift,	Canned fish,	20	15	–	–	Good,	None,	–
SOMERSET.								
Somerset Potters Works,	Fire brick and stone ware,	32	–	–	4	Good,	Time notice,	Complied.
Mount Hope Iron Works,	Nails,	200	–	4	8	Good,	Time notice,	Complied.
Somerset Shoe Company,	Men's shoes,	13	5	–	–	Good,	Closet designated; time notice,	Complied.
TAUNTON.								
Whittenton Manufacturing Company, Nos. 1, 2 and 3,	Colored cotton cloth,	553	547	8	80	Good,	Provide better water-closets; repair elevator; time notices,	Complied.
Elizabeth Pool Mills,	Cotton flannel,	55	120	–	12	Good,	None,	–

Cohannet Mills, Nos. 1 and 2,	Cotton yarns,	120	100	–	8	Good,	None,	–
Canoe River Mill,	Cotton yarns,	30	110	–	8	Good,	Time notices,	Complied.
Eagle Mill Company,	Print cloth,	34	71	4	8	Fair,	Time notices,	Complied.
W. R. Potter Mill,	Hosiery yarns,	32	11	2	–	Good,	None,	–
Westville Mill,	Cotton yarns,	21	35	–	2	Good,	Time notice,	Complied.
Oakland Mills,	Fancy cotton cloth,	50	55	2	3	Good,	Time notice,	Complied.
Reed & Barton,	Silver ware and silver plating,	550	100	–	–	Good,	None,	–
M. M. Rhodes & Sons & Co,	Shoe buttons,	25	25	–	–	Good,	Time notice,	Complied.
Albert Field Tack Company,	Tacks and nails,	165	50	6	10	Good,	Time notice,	Complied.
Taunton Tack Company,	Rivets and tacks and nails,	80	20	–	6	Good,	Time notice,	Complied
West Silver Company,	Plated ware,	50	10	–	–	Good,	Time notice,	–
H. A. Cushman & Co.,	Men's clothing,	24	6	–	–	Good,	Time notice,	–
Charles Hewitt,	Men's, boys' and youths' shoes,	51	9	–	2	Good,	None,	–
Emery & Holmes,	Ladies' shoes,	35	25	–	–	Good,	None,	–
Reed, Barton & Co.,	Silver plating,	20	5	–	–	Good,	None,	–
H. L. Cushman & Co,	Shoe buttons,	22	13	–	–	Good,	None,	–
S. A. Wild Manufacturing Co.	Tin ware,	21	4	–	–	Good,	None,	–
H. A. Williams Manufg. Co.,	Oil cans, awls and crimping tacks,	30	15	–	–	Good,	Time notice,	Complied.
WESTPORT.								
Westport Factory, Nos. 1 and 2,	Carpet warp and wrapping twine,	65	75	4	7	Good,	Closets designated,	Complied.

DISTRICT No. 7, ... JOHN L. KNIGHT, *Inspector.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
AGAWAM.								
Agawam Company,	Woollen goods,	19	8	–	–	Good,	None,	–
AMHERST.								
The Hills Company,	Straw goods,	75	150	–	7	Good,	None,	–
H. D. Feering & Co.,	Straw goods,	30	145	–	1	Good,	Repair safety device to elevator,	Complied.
C. E. Haywood,	Baby-carts,	4	–	–	–	*–	None,	–
Cushman's Mills,	Leather,	19	–	–	–	Good,	None,	–
CHESTER.								
Fay Manufacturing Company,	Beds and cribs,	9	1	–	1	Good,	Post legal notices,	Complied.
Grand Corundum Wheel Co.,	Emery wheels,	13	–	–	–	Good,	None,	–
Hampden Emery Corundum Co.,	Emery wheels,	50	–	–	–	Good,	None,	–
Hampden Emery Corundum Co.,	Corundum and emery,	10	–	–	–	Good,	None,	–
Hampden Corundum Wheel Co ,	Emery wheels,	7	–	–	–	Good,	None,	–
James Kelf,	Quartz,	14	–	–	–	*–	Provide exhaust fans to remove dust,	Complied.
Timothy Keef,	Bedsteads and cribs,	9	–	–	–	Good,	None,	–
CITY OF CHICOPEE.								
Ames Sword Company,	Swords and locks,	88	12	–	9	Good,	Post legal notices,	Complied.
Ames Manufacturing Company,	Machinery and tools,	225	–	–	2	Good,	Provide new cable to elevator,	Complied.

A. W. Page,	Latch needles,	16	10	–	3	Good,	None,	–
Belcher & Taylor,	†–	84	–	–	–	Good,	None,	–
Chicopee Manufacturing Co.,	Cotton goods,	450	650	5	115	Good,	Elevator openings in lower mills to be guarded,	Complied.
Chicopee Manufacturing Co.,	Cotton goods,	–	–	–	–	–	Safety device to be provided to elevator in No. 2 mill; safety device and new cable to elevator in store-house,	Complied.
Dwight Manufacturing Co.,	Cotton goods,	700	900	11	111	Good,	None,	–
Dana S. Courtney,	Bobbins,	18	–	–	3	Fair,	Send illiterate minors to evening schools,	Complied.
Holyoke Brewing Company,	Lager beer,	9	–	–	–	Fair,	None,	–
J. H. Hague,	Machinery,	10	–	–	2	Good,	None,	–
Lamb Knitting Machine Co.,	Knit'ng machines, etc.,	62	1	–	–	Good,	None,	–
Overman Wheel Company,	Bicycles and tricycles,	157	3	–	1	Good,	Doors to be kept unlocked during hours of labor,	Complied.
Overman Wheel Co., Branch Mill,	Bicycles japanned,	10	–	–	–	Fair,	Post legal notices,	Complied.
Overman Wheel Company,	Bicycles and tricycles,	286	2	–	2	Good,	Set screws on shafting to be guarded; post legal notices; file certificate,	Complied.
Samuel Blaisdell, Jr., & Co.,	Cotton and wool waste,	17	28	–	–	Fair,	Post legal notices,	Complied.
Springfield Provision Company,	Provision house,	85	–	–	2	Good,	Belt running through floor to be boxed,	Complied.
The J. Stevens Arm & Tool Co.,	Fire-arms,	49	1	–	–	Good,	None,	–
Taylor & Bromley,	Underwear,	1	8	–	1	Good,	File certificate,	Complied.
Chicopee Reed Manufg. Co.,	Reeds,	4	–	–	–	Good,	None,	–

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* Not good.

† Agricultural tools.

DISTRICT NO. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
CUMMINGTON.								
L. L. Brown Paper Company, .	Loft dried paper,	15	8	–	–	Good, .	Guard fly wheel to engine; rail hatchways; provide safety device to elevator; guard openings to elevator wells; better sanitary arrangements, ...	Complied.
A. V. Stevens, ...	Wood turning, .	21	4	–	–	Good, .	Provide safety device to elevator; keep elevator openings covered when not in actual use, . .	–
EAST BRIMFIELD.								
Snell Manufacturing Company,	Ship augers, .	25	–	–	2	Fair, .	Certificates to be filed; post legal notices; exhaust fans in polishing room, ...	–
EASTHAMPTON.								
Easthampton Rubber Thread, .	Rubber thread, .	55	–	–	4	Good, .	None, ...	–
Easthampton Elastic Web Co., .	Elastic goring and webbing, . .	10	2	–	–	Good, .	None, ...	–
Dibble & Warner, . . .	Elastic goods, .	4	16	–	1	Fair, .	None, ...	–
George S. Colton, . . .	Elastic goods, .	23	30	2	3	Good, .	None, ...	–
Glendale Elastic Fabric Co., .	Elastic goods, .	199	110	–	6	Good, .	Outside doors or hoistways to be guarded by railing, ...	–
Nashawanuck Mfg Co, No. 1, .	Elastic goods, .	150	325	–	12	Good, .	Protect elevator openings, . .	Complied.

Nashawanuck Mfg. Co., No. 2,	Elastic goods,	100	200	–	22	Fair,	Additional water-closets provided; new cable to elevator,	–
Valley Pump Company,	Steam pumps,	40	-	–	1	Good,	None,	–
Williston & Knight Co ,	Buttons,	22	110	–	2	Good,	Designate water-closets,	Complied.
Williston Cotton Mills, No. 1,	Cotton goods,	100	175	2	22	Fair,	None,	–
Williston Cotton Mills, No. 2,	Cotton yarn,	50	60	3	13	Fair,	Better sanitary arrangements; repair safety device to elevator; protect elevator openings,	Complied.
ENFIELD.								
Swift River Company,	Fancy cassimeres,	80	40	–	6	Fair,	None,	–
GRANVILLE.								
Noble & Cooley,	Toy drums,	75	9	–	–	Good,	None,	–
Holcomb Bros.,	Sewing machine parts,	9	–	–	–	Fair,	None,	–
HAMPDEN.								
Scantic Mills,	Horse blankets,	5	1	–	1	Fair,	None,	–
The Alson Mills,	Dress goods,	36	24	–	4	Good,	None,	–
Glen Woollen Mill,	Woollen goods,	23	13	–	–	Fair,	None,	–
CITY OF HOLYOKE.								
Albion Paper Company.	Book paper,	150	90	1	9	Good,	None,	–
American Pad Company,	Paper blocks,	20	30	-	4	Good,	Water-closets designated; certificates to be filed,	Complied.
Beebe & Holbroke,	Loft dried paper,	72	98	–	2	Good,	Post legal notices; repair safety device to elevator,	Complied.
Beebe, Webber & Co.,	Woollen goods,	71	54	–	8	Fair,	Certificates to be filed,	Complied.
B. F. Nichols,	Belting,	12	–	–	1	Good,	None,	–
Buchanan, Bolt & Co.,	Wire cloth,	48	5	–	3	Good,	None,	–

DISTRICT NO. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Holyoke — Continued.								
Chemical Paper Company,	Manilla paper,	180	4	–	16	Good,	Elevator openings to be guarded,	Complied.
Connecticut River Paper Co.,	Writing paper,	86	122	–	3	Good,	Openings to stock elevator to be guarded,	Complied.
Crocker Paper Company,	Colored paper,	53	12	–	–	Good,	None,	–
Chadwick & Chadwick,	Velour plushes,	40	16	–	5	Good,	None,	–
Connor Bros.,	Woollen goods,	68	57	–	8	Fair,	None,	–
City Mill,	Grist mill,	5	–	–	–	Good,	None,	–
Connecticut River Lumber Co.,	Saw mill,	150	–	–	1	Fair,	Box belt on second floor; post legal notices,	Complied.
Casper Ranger,	Sashes and blinds,	41	–	–	–	Good,	None,	–
C. H. Smith & Co.,	Dandy rolls,	3	3	–	–	Good,	Post legal notices,	Complied.
Connor Bros.' New York Mill,	Woollen goods,	150	93	3	25	Fair,	None,	–
D. Mackintosh & Son Co.,	Cottons,	120	–	–	9	Fair,	Better sanitary arrangements; guard gearing on lapping machine; guard set screws on shafting,	Complied.
Dean Steam Pump,	Pumps,	208	–	–	–	Good,	None,	–
Brown & Sellars,	Ferdnere, wire,	11	2	–	1	Good,	Post legal notices,	Complied.
Dickinson & Clarke Company,	Book paper,	34	16	–	–	*–	None,	–
Excelsior Paper Company,	Book paper,	32	18	–	–	Good,	Guard fly wheel to engine and cone-shaped pulley,	Complied.
E. F White,	Paper boxes,	3	9	–	–	Fair,	Post legal notices,	Complied.
E E. Whitiker,	Reeds,	3	–	–	–	Fair,	None,	–

E. L. Dearl,	Tea squares,	3	–	–	–	Good,	None,	–
Edward P. Draper,	Envelopes,	2	5	–	–	Good,	Post legal notices,	Complied.
Eureka Ruling & Binding Co.,	Bookbinding,	10	9	–	–	Good,	Post legal notices,	Complied.
Franklin Paper Company,	Envelope paper,	46	21	–	–	Fair,	None,	–
Farr Alpaca Company,	Dress goods,	327	350	1	90	Good,	None,	–
George R. Dickinson Paper Co.,	Book paper,	88	45	–	1	Good,	Guard fly wheel to engine,	Not used.
Germania Mills,	Woollen goods,	275	75	2	5	Fair,	Guard set screws on shafting; better sanitary arrangements,	Complied.
George W. Prentice & Co.,	Wire goods,	65	–	–	–	Good,	None,	–
Griffith, Axtelle, Cady Company,	Printing,	14	4	–	–	Good,	Post legal notices,	Complied.
Germania Mills,	Woollen goods,	270	65	3	12	Fair,	Guard set screws on shafting in gig room,	Complied.
Hadley Thread Company,	Cotton thread,	221	480	6	59	Fair,	Repair safety device to elevator,	Complied.
Holyoke Envelope Company,	Envelopes,	52	146	–	8	Good,	Guard gearing on steam pump in basement; outside doors kept unlocked; certificates to be filed,	Complied.
Henry Seymour Cutlery Co.,	Shears & scissors,	75	–	–	4	Fair,	Post legal notices,	Complied.
Holyoke Warp Company,	Cotton warp,	59	57	–	20	Fair,	Certificates to be filed,	Complied.
Hampden Glazed Paper Co.,	Cardboard,	43	7	–	2	Good,	New cable to elevator; file certificates,	Complied.
Holyoke Lithograph Company,	Lithographing,	7	–	–	–	Fair,	None,	–
Holyoke Printing Company,	Printing,	12	–	–	4	Fair,	None,	–
Holyoke Machine Company,	Machinery,	240	–	–	1	Good,	None,	–
Holyoke Bar Company,	Machine knives,	5	–	–	–	Fair,	None,	–
Hadley Thread Company,	Cotton thread,	221	480	6	59	Fair,	New water-closets in spooling-room,	Complied.
J. F. T. McDonell,	Paper finish,	3	10	–	5	Good,	Post legal notices,	Complied.
Judson & Williams,	Screen plates,	3	–	–	–	Fair,	None,	–
Lyman Mills,	Cotton goods,	360	670	4	95	Good,	Safety device on elevator in No. 2 mill to be repaired,	Complied.
Massasoit Paper Company,	Loft dried paper,	66	114	–	1	Good,	Fly wheel to engine to be guarded,	Complied.

* Not good.

DISTRICT NO. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED. Males.	Females.	Under 14.	14 to 16.	Sanitary Condition.	Orders Given.	Compliances.
City of Holyoke — Concluded.								
Merrick Thread Company, No 1,	Cotton thread,	252	448	6	79	Good,	None,	–
Merrick Thread Company, No 2,	Cotton thread,	85	148	4	68	Good,	None,	–
Merrick Thread Company, No. 3,	Cotton thread,	57	105	–	49	Good,	None,	–
McCullen & Constable,	Hosiery,	20	15	–	2	Good,	Post legal notices,	Complied.
Massachusetts Screw Company,	Wood screws,	20	2	–	2	Good,	None,	–
Merrick Lumber Company,	Stair work, etc.,	95	–	–	–	Fair,	Set screws to be guarded; outside hoistways to be railed,	Complied.
Massasoit Paper Company,	Loft dried paper,	66	114	–	1	Good,	Set screws in collars on shafting to be guarded or made flush,	Complied.
Newton Paper Company,	Sheathing papers,	64	–	–	3	Fair,	None,	–
Nonotuck Paper Company,	Book paper,	105	59	–	2	Fair,	Legal notices posted; openings to elevator wells guarded,	Complied.
Holyoke Paper Company,	Loft dried paper,	88	122	–	2	Good,	None,	–
National Blank Book Company,	Blank books,	115	85	–	11	Fair,	Post legal notices,	Complied.
Octo's Block,	House furnishing,	–	–	–	–	–	Provide safety device to elevator; protect elevator openings,	*–
Parsons Paper Company, No. 1,	Loft dried paper,	45	120	–	1	Fair,	Set screws on shafting made flush; certificates to be filed,	Complied.
Parsons Paper Company, No 2,	Loft dried paper,	37	133	–	5	Good,	Post legal notices,	Complied.
Parsons Paper Co , Mt. Tom Mill,	Bond and ledger paper,	27	58	–	1	Good,	None,	–
Riverside Paper Company,	Writing paper,	62	82	–	–	Good,	None,	–
Syms & Dudly Company,	Writing paper,	100	100	–	5	Good,	Repair safety device to the elevator,	Complied.

Springfield Blanket Company,	Horse blankets,	198	188	3	17	Fair,	Protect elevator openings,	Complied.
Smith & White,	Paper ruling,	14	24	–	–	Good,	None,	–
Savage Troy Steam Laundry,	Laundry,	3	4	–	1	Fair,	Guard fly wheel to engine,	Complied.
Taylor Manufacturing Company,	Paper boxes,	14	26	–	5	Fair,	Safety device to elevator; protect elevator openings,	Complied.
Tuttle Rubber Company,	Rubber goods,	40	–	–	4	Fair,	None,	–
T. Kegan & Co.,	Steam heaters,	22	–	–	–	Good,	None,	–
Valley Paper Company,	Writing paper,	51	105	–	3	Good,	Certificates to be filed,	Complied.
Wanregan Paper Company,	Loft dried paper,	95	25	–	–	Good,	Protect openings to the elevator well; fan in machine room to be covered with wire screen,	Complied.
Whiting Paper Company, No. 1,	Loft dried paper,	66	114	–	1	Good,	None,	–
Whiting Paper Company, No. 2,	Loft dried paper,	164	283	–	1	Good,	Set screws to shafting guarded or made flush; guard stuff pump,	Complied.
Winona Paper Company,	†–	146	54	–	1	Good,	Post legal notices,	Complied.
Whitmore Manufacturing Co.,	Glazed paper,	58	14	–	1	Fair,	None,	–
William Skinner & Son,	Silk goods,	167	269	–	24	Fair,	Better sanitary arrangements,	Complied.
Syms & Dudly,	Writing paper,	110	60	–	5	Fair,	Guard set screws on shafting in cutter room,	Complied.
HUNTINGTON.								
Highland Woollen Mill,	Woollen goods,	66	34	–	7	Good,	Set screws in collars on shafting, near pulleys or hangers, made flush or guarded,	Complied.
Chester Paper Company,	Loft dried paper,	36	36	–	4	Good,	Guard fly wheel to Pittsburg engine,	Complied.
LONGMEADOW								
Thimble and Spectacle Factory,	Thimbles and spectacles,	5	–	–	–	Good,	None,	–
Meadow Company's Mill,	Stockinet goods,	5	10	–	–	Good,	None,	–

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* In process of construction.

† Engine sized paper.

DISTRICT No. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
LUDLOW.								
Ludlow Manufacturing Co.,	Corded goods,	483	301	13	110	Good,	Opening to elevator wells protected by self-closing hatches or gates,	Complied.
MIDDLEFIELD.								
Bancroft Mill,	Roll paper,	16	4	–	–	Fair,	Better sanitary arrangements; box belt that runs duster,	Complied.
Union Mill,	Hanging and ribb. paper,	14	4	–	3	Fair,	None,	–
MONSON.								
D. W. Ellis & Son,	Cassimeres,	30	35	–	8	Fair,	None,	–
Gage & Reynolds,	Straw goods,	18	62	–	–	Good,	None,	–
H. Hodges & Co.,	Straw goods,	100	100	–	–	Fair,	Better sanitary arrangements,	Complied.
R. M. & F. Reynolds, No. 1,	Dress goods,	42	25	4	4	Fair,	Box belt,	Complied.
R. M. & F. Reynolds, No. 2,	Dress goods,	41	29	–	6	Fair,	None,	–
S. F. Cushman, No. 1,	Cassimeres,	50	35	–	10	Good,	None,	–
S. F. Cushman, No. 2,	Cassimeres,	31	12	–	2	Good,	Protect elevator opening on third floor,	Complied.
Silver Street Mill,	Dress goods,	5	1	–	1	Fair,	Post legal notices,	Complied.
CITY OF NORTHAMPTON.								
A. Kingsbury & Son,	Paper boxes,	9	46	–	1	Good,	Post legal notices, designate water-closets,	Complied.
Clement Manufacturing Co.,	Cutlery,	86	–	–	2	Good,	None,	–

Belding Bros.,	Silk goods,	174	297	–	59	Good,	Repair safety device to the elevator,	Complied.
C. A. Maynard,	Shovels and hoes,	50	–	–	–	Fair,	Gears to shears guarded,	Complied.
Conn Valley Lumber Company,	Saw mill,	115	–	–	1	Good,	Post legal notices,	Complied.
Damon Narrow Fabric Co,	Bindings,	5	37	–	9	Fair,	None,	–
Day & Morgan Paper Mill,	Tissue paper,	4	1	–	–	Fair,	None,	–
E. N. Foot & Co.,	Buttons,	21	4	–	–	Good,	Post legal notices,	Complied.
E. E. Wood Cutlery Company,	Cutlery,	66	4	–	5	Good,	Designate water closets; file certificates,	– Complied.
Florence Manufacturing Co.,	Brushes, mirrors, etc,	55	43	–	3	Good,	Safety device to elevator repaired,	Complied.
Florence Machine Company,	Oil stoves, etc.,	159	1	–	6	Good,	Set screws near pulleys to be made flush or guarded,	Complied.
Florence Tack Company,	Tacks,	45	5	–	–	Fair,	None,	–
Florence Furnishing Company,	Coffins,	16	2	–	–	Good,	Fly wheel to engine to be guarded; set screws to be made flush,	Complied.
Florence Machine Company,	Oil stoves, etc.,	180	1	–	4	Good,	Provide exhaust fan in polishing room; protect elevator openings,	*–
Hill Machine Works,	Machinery,	45	–	–	4	Fair,	Guard set screws; place bars at openings to hoistways,	Complied.
J. N. Leonard & Co.,	Silk goods,	40	114	–	17	Fair,	Guard fly wheel to engine; doors unlocked during hours of labor,	Complied.
J. D Norton & Son,	Woodwork,	4	–	–	–	Fair,	None,	–
Morley Paper Company,	Writing paper,	21	6	–	1	Fair,	Protect elevator openings; provide safety device to elevator,	Complied.
Northampton Emery Wheel Co.,	Emery wheels,	18	–	–	–	Good,	None,	–
Northampton Cutlery Company,	Cutlery,	251	9	–	22	Fair,	Certificates to be filed,	Complied.
Nonotuck Silk Company, No. 1,	Silk goods,	87	256	2	22	Good,	Fly wheel to engine to be guarded by rail,	Complied.
Nonotuck Silk Company, No. 2,	Silk goods,	110	160	2	24	Good,	None,	–
Nonotuck Silk Co., old mill,	Silk goods,	8	30	2	10	Good,	None,	–

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* Partly complied.

DISTRICT NO. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Northampton—Concluded.								
Nap Dovetail Machine Company,	Dovetail machine,	3	–	–	–	Good,	None,	–
Smith-Car Baking Company,	Bakery,	10	–	–	–	Fair,	Provide new cable to elevator; post legal notices,	Complied.
The Whitney Safety Fire-arms Company,	Fire-arms,	28	–	–	–	Good,	Fly wheel to engine to be guarded; protect elevator openings,	Complied.
Watson Paper Company,	Tissue paper,	4	6	–	–	Fair,	None,	–
Horace Lamb,	Wire,	20	–	–	6	Good,	None,	–
Williams Manufacturing Co ,	Baskets,	95	–	–	–	Good,	None,	–
Webster Herrick,	Machinery,	12	–	–	–	Good,	None,	–
PALMER.								
Boston Duck Company,	Cotton goods,	229	216	–	42	Good,	None,	–
F. F. Marcy,	Lumber,	17	1	–	–	Good,	None,	–
J. C. Holden & Co ,	Silk and wool,	25	15	–	2	Good,	None,	–
J. M. Smith,	Shoddy,	4	1	–	–	Good,	None,	–
Massasoit Worsted Company,	Worsted goods,	17	20	–	6	Fair,	Fly wheel crank to engine to be guarded; better sanitary arrangements; file certificates,	Complied.
Massasoit Worsted Company,	Worsted goods,	17	20	–	7	*–	Guard set screws, in collars, near pulleys or hangers; box main belt,	Complied.
Palmer Carpet Company,	Carpets,	52	10	–	6	Good,	Certificates to be filed,	Complied.
Palmer Wire Manufacturing Co.,	Wire goods,	45	1	–	–	Fair,	Protect fly wheel to engine,	Complied.

Thorndike Mill, No. 2,	Cotton goods,	145	120	–	20	Good,	Guard set screws on shafting in dye-house,	Complied.
Thorndike Mill, No 1,	Cotton goods,	155	133	–	19	Good,	None,	–
Palmer Mills of Otis Company,	Dress goods,	360	260	–	47	Good,	Guard set screws in collars on shafting, near pulleys in dye-house,	Complied.
PELHAM.								
Montague City Rod Company,	Fishing-rods,	26	4	–	–	Fair,	Better sanitary arrangements; post legal notice,	Complied.
RUSSELL.								
Fairfield Paper Company,	Loft dried paper,	47	104	–	4	Good,	Certificates for minors filed,	Complied.
Chapin & Gould,	Loft dried paper,	56	38	–	–	Good,	None,	–
SOUTH HADLEY.								
Howard, Gaylord & Co,	Sashes and blinds,	9	–	–	–	Good,	None,	–
Pearl City Paper Mill,	Tissue paper,	4	1	–	–	Fair,	Guard pulleys and belt to rag engine,	Complied.
SOUTH HADLEY FALLS.								
Glasgow Mills,	Dress goods,	130	170	–	20	Fair,	Certificates to be filed,	Complied.
Carew Manufacturing Company,	Loft dried paper.	35	46	–	–	Fair,	None,	–
Hampshire Paper Company,	Loft dried paper,	109	16	–	–	Fair,	Guard main drive pulley,	Complied.
CITY OF SPRINGFIELD.								
A. H. Goetting,	Stationery,	4	1	–	–	Good,	None,	–
A. M. Butterfield,	Dress goods,	–	16	–	–	Good,	Post legal notices,	Complied.
Hay and Storage Company,	Storehouse,	4	–	–	–	Good,	Protect elevator openings,	Complied.
A. F. Ball,	Harnesses,	24	5	–	–	Fair,	Post legal notices; better sanitary arrangements,	Complied.
Barney & Berry Skate Company,	Skates,	70	–	–	2	Good,	Box main belt,	Complied.

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* Not good.

DISTRICT NO. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Springfield — Continued.								
Birnie Paper Company,	Papeteries,	15	24	–	1	Fair,	New cable to elevator,	Complied.
Bemis & Call,	Machine tools,	50	–	–	–	Fair,	None,	–
Bay State Corset Company,	Corsets,	50	200	–	10	Good,	Certificates to be filed; repair gates to elevator openings,	Complied.
B. & A. R. R. Block,	– –	30	–	–	–	–	Elevator gates repaired,	Complied.
Blair Manufacturing Company,	Lawn mowers,	40	–	–	–	Good,	None,	–
Biglow & Co,	Lithographing,	10	–	–	–	Good,	Outside door to be kept unlocked; post legal notices,	Complied.
Bay State Plating Works,	Silver plating,	7	–	–	1	Fair,	Post legal notices,	Complied.
Bay State Corset Company,	Corsets,	50	200	–	10	Good,	Outside doors kept unlocked,	Complied.
Bemis Car-box Company,	Car-boxes,	71	–	–	1	Good,	Set screws guarded or made flush,	Complied.
Chicopee Patent Box Company,	Folding boxes,	11	1	–	–	Good,	Post legal notices,	Complied.
Cutler & West,	Cigar boxes,	69	1	–	5	Fair,	None,	–
Church & Richards,	Cotton warp,	13	3	–	1	Fair,	Exhaust fan placed in picker-room,	Complied.
C. C. Taylor & Son,	Paper boxes,	4	6	–	–	Fair,	None,	–
Cheny Biglow Wire Works,	Dandy rolls,	48	8	–	2	Good,	Guard fly wheel to engine,	Complied.
Chapman Valve Man'factur'g Co,	Hydrants,	219	–	–	3	Good,	Fly wheel to engine to be guarded by railing,	Complied
Charles C. Marshell,	Wood-turning,	7	–	–	–	Fair,	None,	–
Charles Van Vlack,	Electrotyping,	6	–	–	1	Good,	Post legal notices,	Complied.
Clark W. Bryan & Co,	Print'g and bind'g,	41	21	–	4	Good,	Post legal notices,	Complied.
Charles R. Kaplinger,	Print'g and bind'g,	12	2	–	–	Good,	Post legal notices,	Complied.
Co-operative Plate Company,	Nickel plating,	8	–	–	–	Fair,	Post legal notices,	Complied.

C. W. Mutell,	Society goods,	1	15	–	–	Good,	Post legal notices,	Complied.
Century Manufacturing Co.,	Butchers' frocks,	2	10	–	–	Good,	Designate water closets; post legal notices,	Complied.
Duckworth Hard Rubber Co,	Buttons,	70	20	–	7	Good,	Guard fly wheel to engine; file certificate,	Complied.
Davis Level Tool Company,	Tools,	15	–	–	1	Fair,	None,	–
Dwight Print,	Printing,	4	1	–	1	Good,	None,	–
E Stebbins Manufacturing Co.,	Brass goods,	105	–	–	3	Good,	Post legal notices,	Complied.
Excelsior Steam Laundry,	Laundry,	6	14	–	–	Good,	Fly wheel to engine to be guarded by railing,	Complied.
E. C. Stacy,	Machinery,	20	–	–	–	Good,	None,	–
Fisk Manufacturing Company,	Soap,	22	1	–	–	Good,	None,	–
F. H Goldthwaite,	Buttons,	5	–	–	–	Fair,	None,	–
F. B. Taylor,	Sashes and blinds,	8	–	–	–	Good,	None,	–
Felix Barelle,	Harnesses,	4	4	–	–	Fair,	Better sanitary arrangements; post legal notices,	Complied.
Gilbert & Barker Manufg. Co,	Gas machines,	37	–	–	1	Fair,	Set screws made flush or guarded,	Complied.
Holyoke Glazed Paper & Card Co.,	Glazed paper,	67	17	–	2	Good,	Guard gears to stack calendar,	Complied.
Hampden Narrow Fabric Co.,	Cotton and silk,	2	8	–	–	Good,	None,	–
Holt Manufacturing Company,	Hardware,	7	–	–	–	Good,	None,	–
Hampden Paint & Chemical Co,	Paints,	20	3	–	3	Good,	Guard fly wheel to engine; protect elevator openings,	Complied.
Henry W. Pearl,	Paper stock,	3	13	–	–	Good,	Guard openings in floor; post legal notices,	Complied.
Homer Foot & Co.,	Hardware goods sold,	12	–	–	–	Good,	Protect elevator openings,	Complied.
J. Duckworth,	Sewing machine parts,	8	–	–	–	Fair,	None,	–
J. S. Carr,	Crackers, etc,	20	–	–	–	Fair,	Safety device in elevator; protect elevator openings; post legal notices,	Complied.

DISTRICT NO. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED. Males.	Females.	Under 14.	14 to 16.	Sanitary Condition.	Orders Given.	Compliances.
City of Springfield — Continued.								
Joseph Whitcomb & Co.,	Cigars,	62	24	–	1	Good,	None,	–
J. C. Lutz,	Lithographing,	12	–	–	2	Good,	Post legal notices,	Complied.
J. K. Dexter,	Paper stock,	7	20	–	5	Good,	Post legal notices,	Complied.
J. Duckworth,	Sewing machine parts,	8	–	–	–	Fair,	Better sanitary arrangements,	Complied.
John Doolan,	Paper stock,	6	4	–	1	Fair,	Legal notices posted; water-closets designated; certificate filed,	Complied.
John H. Rogers,	Carriages,	13	–	–	–	Good,	Protect elevator openings,	Complied.
J. H. D. Chamberlain,	Brass,	8	–	–	–	Fair,	None,	–
Kibbe Bros. & Co.,	Confectionery,	–	–	–	–	–	None,	–
Kalinbach & Ginsel,	Brewery,	15	–	–	–	Good,	None,	–
L. W. Brown & Co.,	Paper boxes,	8	39	–	–	Fair,	None,	–
Morgan Envelope Company,	Envelopes,	25	50	–	5	Good,	Outside doors kept unlocked,	Complied.
Milton Bradly & Co.,	Lithograph paper,	80	20	–	4	Good,	Doors kept unlocked,	Complied.
Meddlecot & Morgan Company,	Knit goods,	19	68	–	6	Good,	None,	–
Max Lutz,	Malt liquors,	8	–	–	–	Good,	None,	–
Merrick Manufacturing Co.,	Type writers,	36	15	–	2	Good,	File certificate; post legal notices,	Complied.
Mill River Silk Works,	Silk,	5	18	–	2	Good,	None,	–
M. M. Goodale,	Planing mill,	20	–	–	–	Fair,	Repair gates to elevator openings,	Complied.
Morgan Envelope Company,	Envelopes,	62	116	1	6	Good,	None,	–
Martin Cash Carrier Company,	Cash carriers,	6	–	–	–	Good,	None,	–
National Needle Company,	Needles,	149	53	–	20	Good,	None,	–
National Papeterie,	Papeteries,	35	115	–	19	Good,	None,	–

New England Card & Paper Co.,	Glazed paper,	20	7	–	–	Fair,	Elevator well to be protected,	Complied.
Newell Bros. Manufacturing Co.,	Buttons,	130	210	1	34	Fair,	Fly wheel to engine to be guarded by railing,	Complied.
N. W. Merril,	Paper boxes,	8	9	–	–	Good,	None,	–
National Needle Company,	Needles,	149	53	–	20	Good,	Outside doors to be kept unlocked,	Complied.
O. W. Bullock & Co.,	Jeweler's tools,	18	–	–	–	Fair,	Post legal notices,	Complied.
Olmstead's Block,	Harnesses, etc.,	–	–	–	–	Good,	Protect elevator openings,	Complied.
O. S. Houghten,	Paper dealer,	3	1	–	–	Good,	Protect elevator openings,	Complied.
P. P. Kellogg,	Envelopes,	29	58	–	7	Good,	Set screws on coupling to be made flush,	Complied.
W. E. Cigar Company,	Cigars,	7	5	–	–	Fair,	Outside hoistways guarded; post legal notices; better sanitary arrangements,	Complied.
P. J. O'Connell & Son,	Coppersmith,	13	–	–	–	Good,	None,	–
P. C. Colby,	Paper ruling,	6	4	–	1	Good,	None,	–
P. P. Kellogg,	Envelopes,	29	58	–	7	Good,	Outside doors kept unlocked,	Complied.
P. P. Emery,	Coppersmith,	36	–	–	–	Good,	Guard set screws,	–
Russell & Day,	Machinery,	12	–	–	–	Good,	None,	–
Springfield Weaving Company,	Tape,	11	36	–	3	Good,	Certificates to be filed,	Complied.
Springfield Braid Company,	Silk braid,	2	3	–	–	Good,	None,	–
Springfield Wood Working Co.,	Wood-work,	60	–	–	–	Good,	None,	–
Springfield Glue and Emery Wheel Company,	Emery wheels,	75	3	–	–	Good,	None,	–
Springfield Waste Company,	Waste,	38	2	–	3	Fair,	Elevator openings to be covered; certificates filed,	Complied.
Springfield Bindery Company,	Bookbinding,	8	6	–	1	Good,	None,	–
Steere & Turner,	Organs,	30	–	–	–	Good,	None,	–
Smith & Lesquearx & Co,	Spectacles,	24	1	–	2	Good,	None,	–
Smith & Wesson,	Pistols,	400	–	–	–	Good,	None,	–
Springfield Cigar Manuf'g Co,	Cigars,	45	30	–	–	Fair,	Post legal notices,	Complied.
Springfield Shoe Company,	Shoes,	40	20	–	2	Good,	None,	–

DISTRICT No. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Springfield — Concluded.								
Shea Bros.,	Coating paper,	4	–	–	–	Fair,	Box belt running through floor in packing-room,	Complied.
Springfield Printing and Binding Company,	Printing & bind'g,	40	40	–	2	Good,	Post legal notices,	Complied.
Springfield Envelope Company,	Envelopes,	30	40	–	6	Good,	Certificates to be filed,	Complied.
S. P. Burgess,	Paper boxes,	2	16	–	2	Fair,	Certificates filed,	Complied.
Springfield Pump Company,	Pumps,	8	–	-	1	Good,	New cable to elevator,	Complied.
Springfield Foundry Company,	Elevators, etc ,	75	–	–	–	Good,	Fly wheel to engine to be railed; elevator openings protected,	Complied.
Taylor, Nichols & Co ,	Papeteries,	21	55	–	4	Good,	Children's certificates to be filed,	Complied.
Town, Fuller & Co.,	Cigars,	38	40	–	3	Fair,	Children's ceftificates filed,	Complied.
Tucker & Cook Manuf'g Co ,	Cotton yarn,	6	14	–	1	Good,	Gates to elevator openings repaired,	Complied.
T. M. Walker & Co ,	Sashes and blinds,	42	–	–	–	Fair,	Safety device repaired; set screws on shafting made flush,	Complied.
Taylor Bros ,	Paper boxes,	15	4	–	–	Good,	None,	–
Troy Custom Laundry,	Laundry,	5	3	–	–	Good,	Water-closets designated; legal notices posted,	Complied.
Tanter Co ,	Butchers' frocks,	2	13	–	–	Good,	Post legal notices; file certificate,	Complied.
United Manufacturing Company,	Lithographing,	22	–	–	–	Good,	Protect elevator openings,	Complied.
U. S. Spring Bed Company,	Spring beds,	4	–	–	–	Good,	Post legal notices,	Complied.
The Indian Orchard Company,	Cotton warp,	10	15	–	5	Fair,	Protect elevator openings; designate water-closets; post legal notices,	Complied.

Union Newspaper Company,	Publishers,	64	14	–	1	Good,	None,	–
Hotel Gilmore,	– –	–	–	–	–	Good,	Red lights; gongs; watchman; notices in sleeping rooms,	Complied.
American House,	– –	–	–	–	–	Good,	Red lights; gongs; watchman; notices in sleeping rooms,	Complied.
W. H. Wright,	Cigars,	22	8	–	–	Good,	None,	–
Warwick Cycle Manuf'g Co,	Bicycles,	74	1	–	–	Good,	Outside doors kept unlocked,	Complied.
Warren S. Rogers,	Button parts,	4	5	–	–	Fair,	None,	–
Weaver, Shipman & Co.,	Printing,	11	4	–	1	Good,	None,	–
William Fernald,	Wood turning,	4	–	–	–	Fair,	None,	–
William Simpson,	Cigars,	19	12	–	–	Good,	None,	–
Whitman Halter Company,	Halters,	11	1	–	–	Good,	Post legal notices,	Complied.
Wason Manufacturing Company,	Steam cars,	325	–	–	–	Good,	Guard belt rnnning through floor,	Complied.
Waltham Watch Tool Company,	Watch tools,	18	–	–	–	Good,	None,	–
S. F. Merritt,	Gold chains,	5	14	–	1	Good,	Designate water-closets; post legal notices,	Complied.
Hampden Braid Company,	Mohair braid,	9	14	–	2	Fair,	Post legal notices; children's certificate filed,	Complied.
Margerum Bros.,	Cigars,	7	3	–	–	Good,	None,	–
D. H. Joyce & Co.,	Cabinet maker,	9	–	–	–	Fair,	Elevator gates repaired and kept closed when not in use,	Complied.
Phelps Publishing Company,	Publishers,	95	45	–	5	Good,	None,	–
R. H. Smith Manufacturing Co,	Rubber type,	19	4	–	–	Good,	None,	–
Hitchcock Knitting Mills Co.,	Underwear,	4	11	–	–	Good,	Post legal notices; designate water-closets,	Complied.
WALES.								
Excelsior Woolen Mills,	Woollen goods,	22	18	–	2	Fair,	Opening to hoistways to be guarded by a railing,	Complied.
Hegan Mill,	Woollen goods,	50	20	–	3	Fair,	Children's certificates filed,	Complied.

DISTRICT NO. 7 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
WARE.								
C. A Stevens & Co ,	Woollen goods,	100	75	2	16	Fair,	None,	–
George H. Gilbert Manuf'g. Co.,	Dress goods,	177	123	–	25	Fair,	Provide water-closets,	Complied.
Otis Mills,	Cotton underwear,	740	895	12	98	Good,	Rail fly wheel to engine in Nos. 1 and 2 mill; box belt on fifth floor in No. 3 mill,	Complied.
West Ware Paper Mill,	Paper,	16	5	–	1	Fair,	Protect elevator openings, repair safety device for elevator; file children's certificates,	Complied.
WESTFIELD.								
American Whip Company,	Whips,	140	60	–	3	Fair,	Certificates to be kept on file; better sanitary arrangements,	Complied.
American Cigar Company,	Cigars,	57	43	–	–	Fair,	Post legal notices; better sanitary arrangements,	Complied.
A. C. Barnes Whip Company,	Whips,	3	3	–	–	Fair,	None,	–
Atlantic Whip Company,	Whips,	3	1	–	–	Good,	None,	–
Bay State Whip Company,	Whips and lashes,	16	8	–	–	*–	Better sanitary arrangements,	Complied.
Bay State Cigar Company,	Cigars,	9	3	–	–	Fair,	None,	–
Connecticut Valley Cigar Co.,	Cigars,	59	12	–	–	Good,	None,	–
Crane Bros. Glen Mill,	Linen ledger paper,	14	1	–	–	Good,	None,	–
Clark & Parker,	Whips,	12	3	–	–	Good,	None,	–
Colton Cigar Company,	Cigars,	39	12	–	–	Good,	None,	–
Donovan Bros.,	Whips and lashes,	5	3	–	–	Good,	Designate water-closets; post legal notices,	Complied.

Eastern Cigar Company,	Cigars,	40	10	–	–	Good,	Repair safety device,	Complied.
E. Cooper,	Whips and lashes,	2	2	–	–	Fair,	None,	–
Edgar Bryant,	Cigar boxes,	4	8	–	–	Fair,	None,	–
George E. Whipple,	Whips,	17	–	–	3	Good,	None,	–
H O. Sprague & Son,	Stoves and ranges,	18	–	–	–	Good,	Provide safety device for elevator,	Complied.
John C. Schmidt,	Whips and lashes,	22	13	–	1	Good,	Outside hoistway to be railed,	–
Japanese Paper Mill,	Linen rec. paper,	70	80	–	5	Good,	None,	–
J. C. Messick,	Lashes,	6	4	–	–	Fair,	Rail stairways; post legal notices,	–
L H. Beals & Son,	Whips and lashes,	10	6	–	–	Fair,	Designate water-closets; post legal notices,	Complied
Lay Whip Company,	Whips and lashes,	38	9	–	1	Fair,	None,	–
Massasoit Whip Company,	Whips and lashes,	30	7	–	2	Good,	None,	–
Peck & Whipple,	Whips,	15	10	–	1	Fair,	None,	–
Pomery & Van Dusen,	Whips and lashes,	29	8	–	1	Good,	Post legal notices,	Complied.
Sanford Whip Company,	Whips,	57	18	2	2	Good,	None,	–
Springdale Paper Company,	Fine writ'g paper,	44	36	–	–	Good,	Guard set screws; box belt in machine room; guard crank to engine,	Complied.
Schaffier & Co.,	Havana cigars,	7	2	–	–	Good,	None,	–
Standard Whip Company,	Whips and lashes,	9	4	–	–	Fair,	Designate water-closets,	Complied.
Striener & Morse,	Whips and lashes,	16	13	–	–	Good,	Better sanitary arrangements,	Complied
Searle Whip Company,	Whips and lashes,	4	1	–	–	Good,	None,	–
Textile Manufacturing Company,	Casket hardware,	34	25	–	2	Good,	Repair safety device to elevator,	Complied.
Troy Steam Laundry,	Laundry,	6	4	–	–	Good,	None,	–
The H. B Smith Company, No. 1,	Steam heaters,	125	–	–	–	Good,	Provide new cable for the elevator,	Complied.
The H. B. Smith Company, No. 2,	Steam heaters,	208	–	2	4	Fair,	None,	–
Vitrified Wheel Company,	Emery and corundum wheels,	8	–	–	–	Good,	Protect elevator openings; provide safety device to elevator,	Complied.
Westfield Cigar Co.,	Cigars,	30	10	–	–	Good,	None,	–

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* Not good.

DISTRICT NO. 7 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Westfield — Concluded.								
William H. Owen & Co.,	Whips and lashes,	10	15	–	–	Good,	Post legal notices,	Complied.
William Warren Thread Co.,	Whip thread,	20	19	–	–	Good,	None,	–
Westfield Whip Company,	Whips and lashes,	2	–	–	–	Good,	None,	–
Westfield Plating Company,	–	–	–	–	–	–	None,	–
William Sherman,	Cigar boxes,	4	5	–	–	Fair,	None,	–
W. W. Clawson & Co.,	Waste,	6	–	–	–	Good,	Box belt running through floor in picker room,	Complied.
Pfeiffer & Santer,	Lithographing,	3	–	–	–	Good,	Post legal notices,	Complied.
WEST SPRINGFIELD.								
Agawam Paper Company, No. 1,	Loft dried paper,	38	88	–	–	Good,	Outside doors to be kept unlocked during hours of labor,	Complied.
Agawam Paper Company, No. 2,	Loft dried paper,	41	89	–	21	Good,	None,	–
Southworth Paper Mill, No. 1,	Loft dried paper,	52	74	–	–	Good,	Post legal notices,	Complied.
Springfield Glazed Paper Co.,	Glazed paper,	39	6	–	–	Fair,	None,	–
Worthy Paper Mill,	Loft dried paper,	81	44	2	2	Fair,	Box belt in basement,	Complied.
WILBRAHAM.								
Collins Manufacturing Company,	Loft dried paper,	71	94	–	–	Good,	Set screws on shafting to be made flush, or guarded,	Complied.
Wilbraham Woolen Company,	Fancy cassimeres,	23	12	–	2	Fair,	None,	–

WILLIAMSBURG								
A. C. Martin,	Wood turning,	3	–	–	–	Fair,	None,	–
Henry L. James,	Woollen goods,	58	17	–	3	*–	None,	–
Hayden Manufacturing Co,	Brass goods,	249	30	–	6	Good,	None,	–
Hill Bros. & Co,	Buttons and wood turning,	7	1	–	–	Good,	Guard set screws near pulleys or hangers,	Complied.
Nonotuck Silk Company,	Silk goods,	16	72	9	10	Good,	Certificate to be filed,	Complied.
William E. Thair,	Cutlery,	12	–	–	–	Fair,	None,	–
DISTRICT NO. 8,							DANIEL W. HAMMOND, *Inspector.*	
AMESBURY.								
Adams & Pettengill,	Boots and shoes,	23	22	–	–	Good,	Post time table; designate closets,	Complied.
Hamilton Woolen Company,	Print cloth and sheeting,	235	490	4	46	Good,	None,	–
Merrimac Hat Company,	Wool and fur hats,	150	50	–	5	Fair,	New cable on elevator,	Complied.
ANDOVER.								
Abbott Village Mills,	Thread and twine,	85	95	6	27	Fair,	Post time table; designate closets,	Complied.
Frye Village Mills,	Thread and twine,	54	25	5	6	Fair,	Post time table; designate closets,	Complied.
Marland Mills,	Wool'n dress g'ds,	95	105	–	–	Good,	Post time table,	Complied.
Ballard Vale Mills,	White flannels,	90	90	3	9	Good,	None,	–
Craighead & Kintz Company,	Lamps & bronzes,	155	25	–	1	Good,	Designate water-closets,	Complied.
ATTLEBOROUGH.								
W. Coupe & Co,	Factory leather,	50	–	–	1	Good,	Safety device on elevator,	Complied.
Hebrom Manufacturing Co,	Twills and sheet'g,	113	147	–	19	Good,	None,	–

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* Not good.

DISTRICT No. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
BEVERLY.								
Carter, J. F.,	Oil clothing,	20	55	–	–	Fair,	None,	–
Grover & Friend,	Wood and paper boxes,	12	11	–	–	Good,	Post time table; guard opening to elevator,	–
Hurd, C. A.,	Laundry,	3	7	–	–	Good,	Post time table,	–
Mower, F. B., & Son,	Boots and shoes,	100	40	–	–	Good,	Post time table,	–
Naumkeag Buffing Machine Co.,	Buffing machine pads,	3	5	–	–	Good,	Post time table,	–
Porter, William, & Son,	Boots and shoes,	100	50	1	1	Good,	Post time table; procure certificate; guard fly wheel, belt and crank,	Complied.
Smith, J. N., & Co.,	Boots and shoes,	65	60	1	1	Good,	Post time table; procure certificate,	–
Tuck & Hassett,	Boots and shoes,	24	1	1	1	Good,	Post time table; procure certificate; repair elevator,	Complied.
Woodbury, Chas. H.,	Mineral water,	4	1	–	–	Good,	None,	–
Whitman Manufacturing Co.,	Wood turning,	23	12	1	2	Good,	Guard openings, and put safety device on elevator,	–
BRADFORD.								
Haverhill Paper Company,	Paper,	48	–	–	–	Good,	None,	–
C. H. Cox,	Meal and cracked corn,	12	–	–	–	Fair,	Guard set screws in rolling mill,	–
CITY OF FALL RIVER.								
Union Manufacturing Co., No. 1,	Print cloth and wide goods,	137	180	–	15	Good,	None,	–
Union Manufacturing Co, No. 2,	Odd goods,	135	162	3	19	Good,	None,	–

Union Manufacturing Co., No. 3,	Odd goods, . .	111	226	3	18	Good, .	None, ...	–
Richard Borden, No. 1, . .	Odd goods, . .	185	240	–	15	Good, .	None, ...	–
Richard Borden, No. 2, . .	Odd goods, . .	187	213	–	15	Good, .	None, ...	–
*Granite Mills, No. 1, ...	Print cloth and odd goods, .	140	220	3	30	Good, .	None, ...	–
Granite Mills, No. 2, ...	Print cloth and odd goods, .	160	260	1	29	Good, .	None, ...	–
Fall River Iron Works Company,	Print cloth, . .	188	287	2	13	Good, .	None, ...	–
Cornell Mills, ...	Print cloth, . .	50	75	–	8	Good, .	Post time table; procure certificates,	–
GEORGETOWN.								
Georgetown Boot and Shoe Co., .	Boots and shoes, .	45	2	–	–	Good, .	Post time table, ...	Complied.
Noyes, A. B., Corporation, . .	Boots and shoes, .	55	2	–	–	Fair, .	Post time table, ...	Complied.
Brewster, W. M., ...	Boots and shoes, .	60	–	–	–	Good, .	Safety device on elevator, . .	–
GLOUCESTER.								
Burnham, L. A., & Co., . . .	Cotton lines, .	17	–	–	–	Good, .	None, ...	–
Cape Ann Shoe Company, . .	Boots and shoes, .	50	75	–	3	Good, .	Post time table; guard roller and opening to elevator, ...	–
Cape Ann Anchor Works, . .	Steel and iron forgings, . .	50	–	–	–	Fair, .	None, ...	–
Gloucester Net and Twine Co., .	Nets and twines, .	9	116	–	–	Good, .	Guard pulley to pump, . . .	–
Pew, John & Son, ...	Packed fish, .	39	11	–	2	Fair, .	Post time table; designate closets,	–
Shute & Merchant, ...	Packed fish, .	50	10	–	–	Fair, .	Post time table; designate closets,	–
GROVELAND.								
Groveland Mills, No. 1, . .	†–	62	63	3	11	Good, .	Post time table, ...	Complied.
Groveland Mills, No. 2, . .	†–	68	48	–	6	Good, .	Post time table, ...	Complied.
Groveland Mills, No. 3, . .	†–	87	75	2	13	Good, .	Post time table, ...	Complied.

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* Notice sent to treasurer of Beverly Building Association.

† Flannels and dress goods.

DISTRICT No. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
HAVERHILL.								
Bowley & Co., ...	Boots and shoes, .	13	7	–	1	Good, .	Post time table; designate water-closets, ...	–
Barrows & Crowell, . . .	Shoe stitchers, .	4	36	–	–	Good, .	None, ...	–
Barrows, E. S., ...	Contractors, .	7	–	–	–	Good, .	Post time table, ...	Complied.
Blake, Harold F., . . .	Boots and shoes, .	25	1	–	–	Good, .	None, ...	–
Chick Bros., ...	Boots and shoes, .	200	150	–	4	Good, .	Post time table, ...	–
Chick Bros., ...	Boots and shoes, .	35	–	–	1	Good, .	Post time table, ...	Complied.
Currier, O. S., ...	Paper boxes, .	4	10	–	1	Poor, .	Additional water-closet, . . .	Complied.
Currier, O. S., ...	Wood and paper boxes, . .	16	54	1	2	Good, .	Post time table, ...	Complied.
Currier, J. F., ...	Boots and shoes, .	7	5	–	–	Good, .	Post time table, ...	Complied.
Cass, I. N., ...	Shoe contractor, .	14	–	–	–	Good, .	Post time table, ...	Complied.
Chase, W. F., & Co., . . .	Slippers, . .	3	2	–	–	Good, .	None, ...	–
Chaplain, Wm. B., . . .	Slippers, . .	21	6	–	1	Poor, .	Post time table; procure certificate,	Complied.
Chase, H. W., ...	Shoes, . . .	57	18	–	–	Good, .	Post time table; designate closets,	–
Chase, W. S., & Son, . . .	Slippers, . .	28	2	–	–	Poor, .	Post time table; additional sanitary arrangements, . . .	–
Colby, S. W., ...	Shoe stitching, .	1	19	–	–	Good, .	Post time table, ...	–
Durgin, J. H., & Son, . . .	Boots and shoes, .	24	16	–	–	Good, .	Post time table, ...	Complied.
Dudley, A. J., & Co., . . .	Slipper trim'ings,	8	4	–	–	Poor, .	Additional sanitary arrangements, .	Complied.
Day, R. B., ...	Shoe contractor, .	70	–	–	–	Fair, .	New cable to elevator; post time table, guard roller and splitter, .	Complied.

Ellis & Connor,	Boots and shoes,	47	28	–	–	Good,	Post time table; designate water-closet,	–
Ellis & Connor,	Boots and shoes,	95	55	–	1	Good,	None,	–
Evans, W. E , & Co.,	Slippers,	29	1	–	1	Good,	Post time table,	Complied.
Evans & Foss,	Slippers,	10	2	–	–	Poor,	Post time table; additional sanitary arrangements,	–
Field Thayer Manufacturing Co ,	Boots and shoes,	250	100	–	4	Good,	Procure certificate; designate closets; post time table,	Complied.
Fisher, J. M.,	Heeling contractor,	15	–	–	–	Good,	None,	–
Finney, L. A.,	Boots and shoes,	15	11	–	–	Good,	None,	–
Finney, F. H.,	Shoe contractor,	15	–	–	–	Good,	None,	–
Fleurant, M. F ,	Shoe stitching,	1	23	–	–	Good,	Post time table,	–
Goodrich, Hazen B.,	Boots and shoes,	75	50	–	–	Good,	None,	–
Griffen & George,	Boots and shoes,	100	50	–	1	Good,	None,	–
Gale Bros .	Boots and shoes,	160	40	–	2	Good,	New cable to elevator; post time table; designate closet,	Complied.
Green & Nichols,	Sole leather,	34	1	–	2	Good,	Post time table and guard roller and splitter,	Complied.
Greely, Carlton & Co ,	Boots and shoes,	28	12	–	–	Good,	Guard roller and splitter and post time table,	Complied.
Gardner, Thomas & Co.,	Boots and shoes,	85	65	–	1	Good,	Post time table; additional sanitary arrangements,	–
Howe, M. A., & Co ,	Paper boxes,	8	42	–	2	Good,	Post time table,	Complied.
Hoyt, Geo. H. & Son,	Wood and paper boxes,	17	48	–	–	Good,	Post time table,	Complied.
Hicks, C. P.,	Slippers,	13	22	–	–	Poor,	Post time table; additional sanitary arrangements,	Complied.
Hubbard, Lincoln,	Boots and shoes,	2	2	–	–	Poor,	Additional sanitary arrangements; post time table,	Complied.
Holden, A. M., Mrs.,	Shoe stitching,	–	12	–	–	Good,	Post time table,	–

DISTRICT No. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Haverhill — Continued.								
How, Geo. C.,	Slippers,	30	15	–	1	Good,	New cable to elevator; post time table; procure certificate,	Complied.
Hodgdon, Lucy A.,	Shoe stitching,	–	13	–	–	Good,	None,	–
Hoyt, C. N., & Co.,	Boots and shoes,	76	4	–	–	Good,	None,	–
Harris, E. S.,	Boots and shoes,	67	33	–	–	Poor,	Post time table; additional sanitary arrangements,	–
Haverhill Hat Company,	Wool & fur hats,	95	30	–	2	Poor,	Post time table; additional sanitary arrangements,	Complied.
Jennings, Friedman & Stevens,	Boots and shoes,	240	160	–	5	Good,	Designate water-closets,	–
Johnson, L., & Co.,	Men's slippers,	42	3	–	–	Good,	Post time table,	Complied.
Knipe Bros.,	Men's slippers,	97	33	–	2	Good,	Procure certificate,	Complied.
Lapieree, E. M., & Son,	Slippers,	10	–	–	–	Good,	Post time table,	–
Livingston, F. N., & Co.,	Heels & top lifts,	17	–	–	–	Good,	Post time table,	Complied.
Leighton, A. R.,	Slippers,	17	3	–	–	Poor,	Post time table; additional sanitary arrangements,	–
Lynch, J. A.,	Boots and shoes,	5	21	–	–	Poor,	Post time table; additional sanitary arrangements,	Complied.
Lewis, W. C., & Co.,	Boots and shoes,	50	25	–	–	Good,	Post time table; unlock door to stitching room,	–
Martin & Edgerly,	Shoe contractor,	20	–	–	–	Good,	Post time table.	–
Moore, A. S.,	Heeling slippers,	15	–	–	–	Fair,	None,	–
Miller & Foster,	Boots and shoes,	75	75	–	2	Good,	Post time table; guard roller,	Complied.

Norton, M. H.,	Shoe stitching,	4	46	–	1	Poor,	Post time table; procure certificate,	Complied.
Noyes & Williams,	Shoes & slippers,	9	3	–	–	Poor,	None,	–
Noyes & Johnson,	Shoes & slippers,	23	7	–	2	Poor,	Post time table; additional sanitary arrangements,	Complied.
Noyes & Swett,	Boots and shoes,	21	1	–	–	Good,	Post time table,	–
Owens, John, & Co.,	Wood and paper boxes,	12	18	–	2	Good,	Post time table; designate closets,	Complied.
Ordway, A. A.,	Boots and shoes,	37	17	–	–	Good,	Post time table,	Complied.
Osgood, J. H.,	Slippers,	18	7	–	–	Poor,	Post time table; additional sanitary arrangements,	–
Perkins, H. L.,	Gents' clothing,	5	22	–	–	Poor,	Post time table; additional water-closet,	Complied.
Philbrick, G. A.,	Slippers,	2	1	–	–	Poor,	Post time table; add'l water-closet,	–
Pinkham, L. H.,	Shoe stitching,	2	23	–	–	Good,	Post time table,	–
Pilling & Leighton,	Boots and shoes,	9	3	–	–	Good,	Post time table,	–
Ruddock, T. S., & Son,	Boots and shoes,	133	67	–	3	Good,	Post time table; designate closet,	–
Russ, Frank H.,	Slippers,	46	4	–	–	Good,	Post time table; guard roller,	–
Sanders, Thomas,	Sole leather,	30	–	–	–	Good,	None,	–
Stover, J. M.,	Shoes,	110	40	–	–	Good,	Post time table; designate closets,	–
Stone, Perley A.,	Boots and shoes,	95	30	–	1	Good,	Post time table; designate closets,	Complied.
Short, D. S.,	Boots and shoes,	63	12	–	1	Good,	Post time table; designate closet,	Complied.
Spaulding & Swett,	Slippers,	17	6	–	–	Good,	Post time table; designate closet,	–
Spaulding, W. W.,	Boots and shoes,	132	68	–	1	Good,	Post time table,	–
Stevens & Co.,	Woollen dress goods,	50	100	–	6	Good,	Post time table,	–
Searl & Webster,	Boots and shoes,	25	25	–	–	Good,	Additional sanitary arrangements,	–
Stacy, J. C.,	Shoe contractor,	45	–	1	–	Good,	Post time table,	–
Tilton, A. J.,	Boots and shoes,	10	20	–	–	Good,	Post time table,	Complied.
Tewksbury, A. J.,	Patterns and stitching shoes,	1	25	–	–	Good,	None,	–
Tilton & Co.,	Shoe contractor,	17	–	–	–	Good,	None,	–

DISTRICT NO. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Haverhill — Concluded.								
Tobie, S. A.,	Soles, tape and stiffenings,	6	1	–	–	Good,	None,	–
Thom, W, B., & Co.,	Hats,	300	100	–	3	Fair,	None,	–
Tilton, Frank N.,	Shoe stitching,	4	21	–	–	Good,	Post time table,	–
Varney & Hayes,	Wood and paper boxes,	30	50	–	–	Good,	Post time table,	–
Webster & Tabor,	Slippers,	22	8	–	–	Poor,	Post time table; additional sanitary arrangements,	Complied.
Winchell, J. H., & Co.,	Boots and shoes,	400	200	–	5	Good,	Post time table and procure certificates,	Complied.
Webster, G. W., & Son,	Soles and stiffenings,	9	–	–	–	Good,	None,	–
Whittier, William T.,	Shoe stitching,	3	27	–	–	Poor,	Additional sanitary arrangements,	Complied.
Woodbury, E. S.,	Boots and shoes,	150	100	–	6	Good,	Post time table; designate closets,	–
Wallace & Elliott,	Boots and shoes,	167	83	–	4	Good,	Post time table,	Complied.
IPSWICH.								
Ipswich Upper Mills,	Hosiery & jeans,	223	345	–	28	Good,	Guard belt in jersey room; new cable to elevator,	–
Ipswich Lower Mills,	Hosiery & jeans,	27	86	–	5	Good,	None,	–
LAWRENCE.								
Arlington Mills,	Woollen cloths,	1100	1100	–	–	Good,	Designate water-closets,	Complied.

Arlington Mills Cotton Department,	Twines and cotton yarns,	173	327	–	34	Good,	Designate water-closets,	Complied.
Atlantic Mills,	Sheeting and shirting,	350	750	–	–	Good,	Designate water-closets; procure certificate,	Complied.
Butler & Robinson,	Worsted yarn,	75	175	2	–	Good,	None,	–
Clegg & Fisher,	Leatherboard,	33	–	–	1	Good,	Post time table,	–
Everett Mills,	Cotton dress goods,	500	600	7	86	Good,	Post time table; procure certificate,	Complied.
Essex Box Company,	Paper boxes,	2	5	–	1	Poor,	Post time table; additional sanitary arrangements,	Complied.
Farwell Bleachery,	Bleaching and dyeing,	95	5	–	2	Good,	Post time table; designate water-closets,	–
Globe Worsted Mill,	Carpet yarn,	15	55	–	9	Good,	None,	–
Lawrence Duck Company,	Cotton duck,	130	170	–	22	Good,	Post time table,	Complied.
Lawrence Flyer & Spool Works,	Repair shop,	13	–	–	–	Good,	None,	–
Lawrence Line Company,	Lines,	5	15	–	–	Good,	None,	–
Lawrence Family Laundry,	Laundry,	1	3	–	–	Good,	Post time table,	Complied.
Lewis, E. Frank,	Wool scouring,	110	–	–	–	Good,	None,	–
Merrimac Paper Company,	Book paper,	85	40	–	–	Good,	None,	–
McLanathan, F. W.,	Belting and top roll covers,	12	–	–	–	Fair,	None,	–
Pemberton Company,	Cotton cloths,	130	520	–	29	Good,	Designate water-closets,	Complied.
Philips & Kunhardt,	Woollen goods,	98	42	–	2	Good,	None,	–
Pilsbury, C. K., owner of building, Cor. Methuen & Franklin sts.,	– –	–	–	–	–	–	Repair elevator, and guard opening to same,	–
Russell Paper Company,	Papers, cards, etc.	235	25	–	2	Poor,	Additional sanitary arrangements,	Complied.

DISTRICT NO. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Lawrence — Concluded.								
Sprague, L.,	Bobbins, spools, shuttles,	129	1	–	2	Good,	None,	–
The Bacon Paper Company,	Paper,	90	30	–	–	Good,	Designate water-closets,	Complied.
Union Shuttle Company,	Shuttles,	8	–	–	1	Good,	Post time table,	Complied.
Washington Mills,	Woolen cloths,	1080	1120	–	–	Good,	Post time table,	Complied.
Wright Manufacturing Company,	Braids,	12	82	–	12	Good,	Designate water-closets,	Complied.
CITY OF LYNN.								
Baker & Craighton,	Boots and shoes,	100	50	–	1	Good,	Post time table; new cable; repair elevator; guard openings,	Complied.
Bowen, J. H.,	Cut soles,	14	1	–	–	Good,	Guard roller,	Complied.
Creighton Bros.,	Boots and shoes,	100	50	–	2	Good,	Post time table; guard roller; procure certificates,	Complied.
Donallan, John,	Morocco,	80	–	1	2	Fair,	Post time table; procure certificates,	Complied.
Hollis, S. J.,	Boots and shoes,	21	22	–	1	Fair,	Post time table; designate closets,	Complied.
Harney Bros.,	Boots and shoes,	75	50	–	–	Good,	Post time table; guard roller and splitter; repair elevator; new cable,	Partially Complied.
Hebert, Placide,	Boots and shoes,	150	100	–	1	Fair,	Post time table; guard fly wheel and belt,	–
Ingalls, J. W., & Son,	Boots and shoes,	50	50	–	–	Good,	Post time table; guard roller,	Complied.
Lynn Laundry,	Laundry,	7	16	–	–	Good,	Post time table; designate closets,	–

Lynn Daily Item,	Newspaper,	23	3	–	–	Good,	None,	–
Lynn Box Company,	Wood and paper boxes,	20	40	–	4	Good,	Guard elevator opening; procure certificate,	Complied.
Lord & Gerry,	Shoe stitching,	1	79	–	–	Good,	Post time table,	Complied.
Legro, A. P.,	Boots and shoes,	40	35	1	2	Fair,	Post time table; guard roller,	–
Moulton, John T.,	Morocco,	42	–	–	–	Good,	None,	–
Redpath Bros., Mfg. Company,	Boots and shoes,	65	25	1	1	Good,	Post time table; designate closets,	–
Sherry, P. P.,	Boots and shoes,	40	35	–	–	Good,	Post time table; designate closets,	–
Sellers, M. M.,	Button holes,	1	13	–	–	Good,	Post time table,	Complied.
Sprague, W. D.,	Boots and shoes,	40	35	–	–	Fair,	Post time table; guard roller, splitter and dinking machine,	–
Ashton, H. F.,	Shoe stitching,	1	19	–	–	Good,	Post time table,	–
MANSFIELD.								
Comey & Co.,	Straw & felt goods,	75	225	–	–	Good,	Post time table,	–
METHUEN.								
Methuen Company,	Fancy shirting and ticking,	120	280	2	17	Good,	None,	–
Methuen Woollen Company,	Woollen cloths,	290	10	–	–	Good,	None,	–
Knitted Fabric Company,	Knit goods,	17	33	–	–	Good,	None,	–
Klous, E. J.,	Woollens,	12	28	–	–	Good,	Post time table; designate closets,	Complied.
NEW BEDFORD.								
Moyhan & Co.,	Dry & fancy goods,	17	33	4	4	Good,	Post time table; procure certificates,	Complied.
E. B. Whiting,	Dry & fancy goods,	13	15	–	6	Good,	Post time table,	Complied.
Knowles & Co.,	Dry & fancy goods,	4	11	1	2	Poor,	Post time table; additional water-closet,	Complied.
Haskell & Tripp,	Dry & fancy goods,	7	53	4	2	Good,	Post time table; procure certificates,	Complied.

DISTRICT No. 8 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
New Bedford — Concluded.								
J. V. Spare,	Dry & fancy goods,	2	5	–	1	Poor,	Post time table; additional sanitary,	Complied.
Moore & Dimon,	Dry & fancy goods,	2	8	–	1	Poor,	Post time table; additional sanitary,	–
J. Poisson,	Dry & fancy goods,	4	5	–	–	Fair,	None,	–
Hathaway Mills,	Lawns & sateens,	140	183	–	17	Good,	Post time table,	–
CITY OF NEWBURYPORT.								
Burley & Usher,	Boots and shoes,	150	75	–	–	Good,	None,	–
Dodge, E. P. & Co.,	Boots and shoes,	500	250	–	24	Good,	None,	–
Hoag & Durgin,	Boots and shoes,	118	2	–	2	Good,	Post time table,	Complied.
Hale, E. A.,	Paper boxes,	4	16	–	–	Good,	None,	–
Lithoid Manufacturing Company,	Collars and cuffs,	68	25	–	–	Good,	Designate water-closets,	Complied.
Means, H. C,	Shoe stitching,	1	74	–	–	Good,	Post time table,	Complied.
Peabody Mills,	Sheeting and shirting,	120	230	–	–	Fair,	None,	–
Wilder & Clark,	Boots and shoes,	110	50	–	–	Good,	None,	–
Victoria Mills,	Sateens and jeans,	134	246	1	10	Good,	Post time table; procure certificate,	Complied.
NORTH ANDOVER.								
Sutton's Woollen Mill,	Flannels,	83	32	2	3	Good,	None,	–
North Andover Mills,	Woollen dress goods,	46	34	1	6	Good,	None,	–
NORTH ATTLEBOROUGH.								
Adamsdale Mill,	Cotton yarns,	20	30	–	8	Good,	None,	–

PEABODY.								
Lennox, P., & Co.,	Dongola kid,	210	–	–	–	Fair,	Post time table; repair elevator; new cable; guard openings,	–
Moore & Pray,	Dongola kid,	20	–	–	1	Fair,	Post time table; procure certificate,	–
ROCKPORT,								
Hollis, S. J., & Co.,	Boots and shoes,	100	33	–	–	Good,	Post time table; guard belt in finishing room, set screws in counter shaft; guard roller and splitter,	–
ROWLEY.								
F. W. Henderson & Co.,	Shoes,	25	–	–	–	Good,	Keep hatchway door closed,	–
S. A. Boynton,	Heels,	30	–	–	3	Good,	Post time table; guard roller,	–
Brainard Damon,	Inner soles,	9	6	–	–	Good,	None,	–
F. L. Burk,	Heels,	55	–	–	–	Good,	Guard roller,	–
CITY OF SALEM.								
Curtis. H. F.,	Bread, cake, etc.,	5	5	–	–	Good,	None,	–
Consolidated Adjustable Shoe Co.,	Boots and shoes,	35	25	–	–	Good,	Post time table; guard roller; designate closets,	Complied.
Cole, B. E. & Co.,	Boots and shoes,	300	100	–	–	Good,	Post time table; guard roller; and set screws to heeling machine,	Complied.
Devlin Bros.,	Pasted shoe stock,	19	21	–	5	Fair,	Post time table; guard set screws,	–
Grinnell, J. F. Dane & Co.,	Boots and shoes,	50	25	–	1	Good,	None,	–
Naumkeag Mills,	Cotton cloths,	500	900	1	89	Good,	None,	–
Power, D. B. H. & Co.,	Furniture,	10	2	–	–	Good,	Guard opening to elevator,	–
Page, F, M.,	Cotton shoe findings,	9	3	–	3	Poor,	Post time table; procure certificate; additional sanitary arrangements,	–
Page, Warren & Co.,	Shoe counters,	42	18	–	6	Good,	Procure certificate; guard belt and set screws,	Complied.

DISTRICT NO. 8 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Salem — Concluded.								
Straw, L. G. & Co., ...	Boots and shoes, .	100	100	–	–	Good, .	Post time table; box belting; guard roller, ...	–
Shortell, M. & Son, ...	Boots and shoes, .	31	19	–	2	Good, .	Post time table, ...	Complied.
SANDWICH.								
Charles W. Spurr & Co, . .	Wood veneer, .	22	3	–	–	Good, .	None, ...	–
Cape Cod Glass Company, . .	Glass ware, . .	25	15	–	–	Good, .	None, ...	–
Sandwich Tack Company, . .	Tacks and nails, .	10	–	–	–	Good, .	None, ...	–
Sandwich Co-operative Glass Co.,	Shades,globes,etc,	30	–	–	–	Good, .	None, ...	–
TAUNTON.								
M. H. Skinner & Co., ...	Dry goods, . .	30	20	2	1	Good, .	None, ...	–
Glenwood Finishing Company, .	House furniture, .	15	5	–	–	Good, .	None, ...	–
Sargent & Co, ...	Dry goods, . .	2	4	–	1	Poor, .	Additional closet; post time table, .	–
P. D. Cutter, ...	Dry goods, . .	2	1	1	–	Good, .	None, ...	–
Colby Clothing House, . .	Gents' clothing, .	21	10	–	–	Poor, .	Additional sanitary; post time table,	–
Charles Hewett & Co., . .	Shoes, . . .	46	9	–	–	Good, .	Post time table; designate closets, .	–
L. B. Higgins & Co., . . .	Dry goods, . .	5	5	–	1	Fair, .	Post time table; designate closet; procure certificate, ...	–
Boston Store, ...	Dry goods, . .	3	2	1	–	Poor, .	Post time table; additional sanitary,	–
West Silver Company, . .	Plated ware, .	50	10	–	–	Good, .	None, ...	–

WEST NEWBURY.								
H. G. O. & T. M. Chase,	Combs,	23	1	–	–	Good,	None,	–
Noyes, S. C.,	Combs,	35	5	–	–	Good,	Post time table,	Complied.

DISTRICT No. 9, ... JAMES H. CHADWICK, *Inspector*.

ABINGTON.								
W. E. Lyon,	Boots and shoes,	40	10	–	–	Good,	Post time tables,	Complied.
M. H. Arnold,	Boots and shoes,	603	116	1	1	Good,	Guard fly wheel; sewing-machine shafting,	Complied.
Lewis A. Crossett,	Boots and shoes,	81	20	–	–	Good,	Guard fly wheel; post time tables,	Complied.
Reeds Mill,	Ground plaster meal,	4	–	–	–	Good,	Guard fly wheel,	Complied.
William Peasley,	Wood work,	4	–	–	–	Good,	None,	–
Arnold Bros.,	Lasts,	9	–	–	–	Fair,	None,	–
T. F. Giles,	Quilting of soles,	9	2	–	2	Good,	None,	–
Abington Tack Company,	Tacks,	21	7	–	–	Fair,	None,	–
Baker & Whitmarsh,	Boots and shoes,	76	25	–	–	Good,	None,	–
W. S O'Brien,	Heels,	17	13	–	–	Fair,	None,	–
E. L. Sprague,	Boots & shoes,	45	15	–	–	Good,	None,	–
Kent & Brown,	Gloves & mittens,	9	16	–	–	Good,	None,	–
AVON.								
L. G Littlefield,	Shoes,	81	20	–	4	Fair,	None,	–
E. Tucker & Son,	Boots and shoes,	115	35	–	–	Fair,	None,	–
BRAINTREE.								
Monattaquoit Mills,	Paper,	57	15	–	1	Good,	None,	–
B F Smith,	Absorbent cotton,	5	–	–	–	Fair,	None,	–
Redpath Bros.,	Boots and shoes,	46	4	–	–	Fair,	None,	–

DISTRICT NO. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Braintree — Concluded.								
John Long & Son,	Shoes and boots,	64	1	–	–	Good,	None,	–
Drinkwater Tannery,	Leather,	20	–	–	–	Good,	None,	–
Morrison Bros.,	Woollen yarn,	15	25	–	–	Good,	None,	–
Stevens & Willis,	Tacks and nails,	18	1	–	–	Good,	None,	–
Soule's Trunk Factory,	Leather trunks,	7	–	–	–	Good,	None.	–
William Keeland & Co.,	Shoes,	63	12	–	–	Good,	None,	–
Strauss, Kinsley & Co.,	Shoddy,	8	2	–	–	Fair,	None,	–
L. O. Crocker,	Cond'tors punches,	7	–	–	–	Good,	None,	–
Jenkins Manufacturing Company,	Boot and shoe lacings,	14	14	–	–	Good,	None,	–
Allen Fan Company,	Fans,	5	25	–	–	Good,	None,	–
Columbia Rubber Company,	Rubber clothing,	27	5	–	1	Fair,	None,	–
H. B. Woodsan & Co.,	Tacks & shoe nails,	12	3	–	–	Fair,	None,	–
BRIDGEWATER.								
Bridgewater Spring Company,	Shoe shank springs,	12	2	–	1	Fair,	None,	–
James Ferguson,	Valves,	6	–	–	–	Good,	None,	–
Eagle Cotton Gin Company,	Cotton gins, boxes,	100	–	–	3	Good,	None,	–
Perkins Bros.,	Wire nails,	7	–	–	–	Good,	None,	–
Perkins Foundry,	Machinery castings,	30	–	–	–	Good,	None,	–
Bridgewater Iron Company,	*–	103	–	–	–	Good,	None,	–

BROCKTON.								
A. Barrows,	Shoes,	195	22	–	1	Good,	None,	–
Walker & Taylor & Co.,	Shoes,	30	18	–	1	Good,	None,	–
Edwin Keith,	Shoes,	37	9	–	–	Good,	None,	–
Henry J. Miller,	Tacks,	9	1	–	1	Good,	None,	–
Sidney E. Packard,	Paper boxes,	8	15	–	–	Good,	None,	–
Standard Rubber Company,	Gossamer rubber clothing,	27	78	–	2	Fair,	None,	–
M. Pratt,	Foundry,	7	–	–	–	Good,	None,	–
H. C. Fuller,	Coloring and bleaching,	12	3	–	–	Good,	None,	–
L. E. Keith,	Shoes,	32	6	–	–	Fair,	None,	–
Woodward & Wright,	Last,	23	–	–	–	Fair,	None,	–
Mitchel & Co.,	Shoes,	35	8	–	–	Good,	None,	–
Whitman & Keith,	Shoes,	148	42	–	4	Fair,	None,	–
Baxendale & Co,	Box toes,	20	2	–	–	Fair,	None,	–
Edward Sheedy,	Boots and shoes,	10	3	–	–	Good,	None,	–
Leach & Co.,	Tacks,	5	1	–	–	Good,	None,	–
Sherman & Edson,	Laundry,	7	4	–	–	Good,	None,	–
Reed Bros.,	Tacks and nails,	68	5	–	–	Good,	None,	–
F. L. Stone & Co.,	Machinist,	7	1	–	–	Fair,	None,	–
Drew & Whitney,	Heels,	20	10	–	–	Fair,	None,	–
American Heeling Manufg. Co.,	Heeling machine,	20	–	–	–	Good,	None,	–
Preston B Keith,	Shoes,	260	65	–	7	Good,	None,	–
W. L. Douglas,	Shoes,	122	38	–	6	Good,	None,	–
E. M. Low,	Paper boxes,	23	48	1	4	Good,	None,	–
Shaw Bros.,	Shoes,	20	1	–	–	Good,	None,	–
D. K. Carpenter,	Heels,	3	12	–	–	Fair,	None,	–
George F. Snow,	Shoes,	200	100	1	4	Good,	None,	–
Stacy, Adams & Co.,	Shoes,	207	48	–	–	Fair,	None,	–

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* Yellow metal castings and nail plates.

DISTRICT No. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Brockton — Concluded.								
J. S. Alden & Co.,	Shoes and boots,	103	30	–	–	Good,	None,	–
H. F. Marshall,	Boots and shoes,	70	9	1	–	Good,	None,	–
C. E. Leach & Co.,	Shoes,	25	8	–	–	Good,	None,	–
Brockton Co-operative Shoe Co.,	Shoes,	31	6	–	–	Fair,	None,	–
Kimball Bros.,	Machinery,	9	–	–	–	Good,	None,	–
H. B. Reed & Co.,	Shoes,	138	21	–	–	Good,	None,	–
Lilly, Brackett & Co.,	Shoes,	176	21	–	–	Good,	None,	–
Thompson Bros.,	Shoes,	79	30	1	1	Good,	None,	–
S. G. Jones,	Shoes,	67	22	–	–	Good,	None,	–
George E. Keith (Campello),	Boots and shoes,	489	98	–	8	Fair,	None,	–
W. W. Cross & Co.,	Tacks,	11	1	–	–	Fair,	None,	–
Charles T. Field,	Heels,	8	–	–	–	Good,	None,	–
Howard W. Reynolds,	Shoes,	45	16	–	–	Good,	None,	–
Mark H. Reynolds,	Shoes,	5	–	–	–	Good,	None,	–
Reuben L. Paine,	Brass castings,	4	–	–	–	Good,	None,	–
Brockton Iron Foundry,	Castings,	5	–	–	–	Good,	None,	–
Henry M. Kingman,	Shoes,	120	30	–	–	Good,	None,	–
L. M. Reynolds,	Shoes,	162	39	–	–	Good,	None,	–
George H. Wood & Co.,	Shoes,	28	4	–	–	Good,	None,	–
CANTON.								
G. H. Mansfield & Co.,	Fish lines and cord,	2	11	1	1	Good,	Designate closet; time table,	Complied.
Kinsley Iron Company,	– –	224	1	–	–	Good,	Guard gears,	Complied.

Eureka Silk Mill, No. 1,	Sewing silk,	50	175	–	–	Good,	Designate closets,	Complied.
Eureka Silk Mill, No. 2,	Sewing silk,	6	39	–	4	Good,	Designate closets,	Complied.
Eureka Silk Mill, No. 3,	Sewing silk,	17	45	–	4	Good,	Designate closets,	Complied.
American Net and Twine,	Twine,	26	34	–	2	Good,	Certificates for children,	Complied.
F. D. Dunbar,	Paper boxes,	3	9	–	–	Good,	Designate closets; time tables,	Complied.
Charles Stretton & Sons,	Knit goods,	6	4	1	–	Good,	Time tables; certificates,	Complied.
Morse Bros.,	Stove polish,	15	–	–	–	Good,	Designate closets,	Complied.
Canton Mfg. and Bleaching Co.,	Bleaching boxes,	50	8	–	–	Good,	Designate closets; time table; guard shafting and gears,	Complied.
Knitted Mattress Company,	Mattresses,	6	2	–	–	–	None,	–
Draper Bros.,	Woollen,	24	11	–	–	–	None,	–
Draper Bros ,	Wool'n and cot'n,	61	9	–	–	–	None,	–
L. R. Wattles,	Dressine,	3	–	–	–	–	None,	–
Canton Mfg. and Bleaching Co.,	– –	50	8	–	–	–	Designate closets; guard shafting,	Complied.
DEDHAM.								
Merchants Woollen Mill,	Woollens,	95	55	–	–	Good,	None,	–
J. V. Abbott Manufacturing Co.,	Loom pickers; leather goods,	11	–	–	–	Good,	None,	–
Goding Bros.,	Wood sawing; grist mill,	5	–	–	–	Good,	None,	–
Dye house (Merchants Mill),	Scouring and dyeing; wool sorting,	20	1	–	–	Good,	None,	–
C. D. Brooks Chocolate Mill,	Chocolate,	4	4	–	–	Good,	None,	–
Geo. W. Caston & Co.,	Cold proof shoes and slippers,	2	15	–	2	Good,	None,	–
Jacob Lorio,	Cardigan jackets,	1	3	–	–	Good,	None,	–

DISTRICT NO. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
FOXBORO.								
Foxboro Foundry & Machine Co.,	Steam heaters, .	35	–	–	–	Good, .	None, ...	–
Foxboro Steam Laundry, . .	Laundry, . .	6	8	–	–	Good, .	None, ...	–
A. H. & A. F. Young, . . .	Coloring and bleaching, .	11	–	–	1	Good, .	None, ...	–
Union Straw Works, . . .	Straw goods, .	214	254	–	5	Good, .	None, ...	–
HANOVER.								
H. V. Goodrich, ...	Shoes, . . .	50	25	–	–	Good, .	None, ...	–
Studley & Allison, . . .	Shoes, . . .	10	5	–	–	Good, .	None, ...	–
C. A. Mann, ...	Shoes, . . .	10	2	–	–	Good, .	None, ...	–
W. E. Studley, ...	Shoes, . . .	29	4	–	–	Good, .	None, ...	–
Killam & Turner, . . .	Boots and shoes, .	15	3	–	1	Good, .	None, ...	–
HINGHAM.								
Burr, Brown & Co , . . .	Fringe, tassels, etc., . . .	15	45	–	3	Good, .	None, ...	–
James Dower & Sons, . . .	Ropes, . . .	7	–	–	–	Good, .	None, ...	–
HOLBROOK.								
Thomas White, ...	Boots and shoes, .	249	51	–	–	Good, .	None, ...	–
Thomas White & Co., . . .	Paper boxes, .	20	40	–	–	Fair, .	Time tables; designate closets, .	Complied.
Whitcomb & Paine, . . .	Boots and shoes, .	300	12	–	–	Good, .	None, ...	–
Whitcomb & Paine, . . .	Boots and shoes, .	60	–	–	–	Good, .	None, ...	–

Thayer & Son,	Shoe strings,	4	7	–	–	Fair,	None,	–
Lewis Alden,	Boots and shoes,	8	–	–	–	Good,	None,	–
John Peach,	Boots and shoes,	81	83	–	–	Good,	None,	–
HYDE PARK.								
Glover & Wilcomb,	Curled hair,	63	32	–	1	Good,	None,	–
Electric Starch Company,	Starch,	4	–	–	–	Good,	None,	–
American Tool and Machine Co.,	Machinist's tools; machinery,	102	–	–	–	Good,	None,	–
American Foundry Company,	Castings,	73	–	–	–	Good,	None,	–
Boston Blower Company,	Machinist's tools; machinery,	59	–	–	–	Good,	None,	–
John Scott,	Wool scouring,	21	–	–	–	Good,	None,	–
R. L. Frampton,	Leather,	25	–	–	–	Good,	None,	–
Boston Gossamer Rubber Co.,	Rubber clothing,	50	12	–	–	Good,	Guard fly wheel; post time table,	Complied.
Sturveant's Mill,	Mill stones,	–	–	–	–	Good,	None,	–
Hyde Park Photograph Co.,	Phototypes,	8	–	–	–	Good,	None,	–
Roger's Royal Remedies,	Patent medicines,	3	2	–	–	Good,	Post time tables,	Complied.
Hyde Park Steam Laundry,	Laundry,	3	8	–	–	Good,	None,	–
Johnston Carriage Manuf'y,	Carriages,	15	–	–	–	Good,	None,	–
Fairmount Manufacturing Co.,	Ladies' underwear,	1	59	–	–	Good,	Designate closets; post time tables; guard shafting,	Complied.
Mattapan Mills,	Paper,	70	50	–	–	Good,	None,	–
Branard Milling Machine Co,	Machinist's tools,	110	–	–	–	Good,	Safety device for elevator,	Complied.
John F Robinson,	Box machinery,	37	–	–	–	Good,	Safety device for elevator,	Complied.
Edward J. Hughes,	Tonics,	4	–	–	–	Good,	None,	–
Robert Bleakie & Co.,	Woollens,	312	120	9	5	Good,	None,	–
A. J. Wilkinson & Co.,	Machinist's small tools,	10	–	–	1	Fair,	None,	–
Hood & Reynolds,	Dental tools,	14	–	–	–	Fair,	None,	–

DISTRICT No. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Hyde Park — Concluded.								
Gray, Ward & Co ,	Shoddy,	18	4	–	2	Fair,	None,	–
Clifton Manufacturing Company,	Gossamer rubber,	10	–	–	–	Good,	None,	–
E. T. Leslie,	Stair builder,	6	–	–	–	Fair,	None,	–
Randall & Langley,	Printing,	5	2	–	–	Fair,	None,	–
Samuel Meoseely,	Printing,	6	–	–	–	Fair,	None,	–
Hyde Park Electric Light and Power Company,	Electricity,	5	–	–	–	Fair,	None,	–
Carl Zimmanan,	Window shade manufactory,	3	–	–	–	Good,	None,	–
KINGSTON.								
L E. Ford & Co.,	Tacks,	7	1	–	1	Fair,	None,	–
J W. Delano,	Rivets and burrs,	3	–	–	–	Fair,	None,	–
H. C. & W. S. Cole,	Tacks,	7	1	–	–	Fair,	None,	–
C. Drew & Co.,	Mechanic's small tools,	8	–	–	–	Good,	None,	–
Old Colony Rivet Company,	Rivets,	11	1	–	–	Fair,	None,	–
Stetson & Woodard,	Tacks and small nails,	7	1	–	1	Fair,	None,	–
Cobb & Drew,	Tacks and small nails,	59	3	–	1	Fair,	None,	–
MATTAPOISETT,								
Bay State Chair Company,	Chairs,	26	1	–	–	Bad,	Guard shafting; additional closets; clean closets,	Complied.

MEDFIELD.								
Excelsior Box Factory, . .	Grist mill boxes,	12	–	–	–	Good, .	Elevator safety, ...	Complied.
J. H. Baker's, ...	Carriages, . .	16	–	–	–	Good, .	None, ...	–
Searle, Dailey & Co., . . .	Straw goods, .	350	450	–	–	Good, .	None, ...	–
American Steam Packing Co., .	Steam packing, .	6	–	–	–	Good, .	Guard belt, ...	Complied.
MIDDLEBOROUGH.								
Star Mill, ...	Woollens, . .	94	26	–	5	Good, .	None, ...	–
W. H. Schuetter & Co., . .	Jewelry, . .	21	11	–	–	Good, .	None, ...	–
Leonard & Barrows, . . .	Shoes, . . .	143	87	–	4	Good, .	None, ...	–
C. D. Kingman, ...	Boots and shoes, .	42	3	–	–	Good, .	None, ...	–
Le Barron Foundry Company, .	Castings, . .	37	–	–	–	Good, .	None, ...	–
Bay State Straw Works, . .	Straw goods, .	585	205	–	–	Good, .	None, ...	–
Murdock Parlor Grate Company,	Parlor grates; brass work, .	35	–	–	–	Good, .	None, ...	–
Hammond & Richmond, . .	Shoes, . . .	18	2	–	–	Good, .	None, ...	–
Alden & Pratt, ...	Shoes, . . .	35	5	–	–	Good, .	None, ...	–
Keith & Pratt, ...	Shoes, . . .	25	5	–	–	Good, .	None, ...	–
MILTON.								
Walter Baker & Co., . . .	Chocolate, . .	37	30	–	–	Good, .	None, ...	–
Walter Baker & Co. (Ware Mill),	Grinding of chocolate, . .	5	–	–	–	Good, .	None, ...	–
T. Strangman & Co., . . .	Carriages, . .	26	–	–	–	Good, .	None, ...	–
Bent & Co., ...	Water crackers, .	19	2	–	1	Good, .	Post time table; certificates for children, ...	Complied.
NORTH SCITUATE.								
S. G. W. Lee, ...	Seam stays, . .	4	–	–	–	Good, .	None, ...	–
F. W. Varney, ...	Congress boots, .	7	–	–	–	Good, .	None, ...	–

District No. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
North Scituate — Concluded.								
G. W. Litchfield,	Shoes,	12	–	–	–	Good,	None,	–
T O. Bailey & Co.,	Shoes,	12	2	–	–	Good,	None,	–
G. W. Bailey,	Shoes,	38	2	–	–	Good,	None,	–
NORWELL.								
C. W. Sparrell,	Coffins & caskets,	4	–	–	–	Good,	None,	–
Tenney's Mill,	Saw mill,	4	–	–	–	Good,	None,	–
G. W. H. Litchfield,	Shoes,	70	25	–	–	Good,	None,	–
C. C. Young,	Shoes,	29	5	–	–	Good,	None,	–
C. Grose & Sons,	Shoes and boots,	105	20	–	–	Good,	None,	–
Curtis Bros.,	Boots and shoes,	30	5	–	–	Good,	None,	–
NORWOOD.								
M. H. Howard,	Wood work,	25	1	–	–	Good,	None,	–
W. A. Metcalf,	Machine jobbing,	3	–	–	–	Good,	None,	–
Winslow Bros.,	Tannery,	175	–	–	–	Fair,	None,	–
Smith Tannery,	Leather,	165	–	–	–	Fair,	None,	–
Bell & Casey,	Castings,	12	–	–	–	Fair,	Guard fly wheel,	Complied.
PLYMOUTH.								
Plymouth Woollen Company,	Woollen,	72	38	–	5	Good,	None,	–
Francis T. Emery,	Boots and shoes,	192	44	–	–	Good,	None,	–
Plymouth Foundry Company,	Stoves & ranges,	60	–	–	–	Good,	Safety device for two elevators,	Complied.

Plymouth Steam Laundry,	Laundry,	2	7	–	–	Fair,	None,	–
Robinson Iron Company,	Iron,	35	–	–	–	Good,	None,	–
Plymouth Mills,	Tacks and rivets,	45	7	–	–	Good,	None,	–
Plymouth Straw Works,	Straw goods,	10	65	–	–	Good,	None,	–
Russell Mills,	Cotton,	52	32	–	5	Good,	None,	–
Hayden Mill,	Cotton,	20	7	–	–	Fair,	None,	–
C. L. Leeds,	Copper and zinc nails,	10	–	–	–	Fair,	None,	–
Plymouth Cordage Company,	Cordage,	415	58	5	39	Good,	None,	–
Plymouth Boots & Shoes,	Boots and shoes,	27	4	–	–	Good,	Time tables; designate closets,	Complied.
Seamless Pocket Company,	Seamless pockets,	3	4	–	–	Bad,	Additional closets; time tables; designate closets,	Complied.
QUINCY.								
James Murdock & Son,	Stone polishing,	10	–	–	–	Fair,	None,	–
Franklin Curtis,	Boots and shoes,	4	–	–	–	Fair,	None,	–
Thomas Curtis,	Boots and shoes,	7	–	–	–	Fair,	None,	–
Rice & Hutchins,	Boots and shoes,	80	20	–	–	Fair,	None,	–
Graham & Co,	Boots and shoes,	45	5	–	–	Good,	Designate closets; guard shafting,	Complied.
Whicher & Co,	Boots and shoes,	130	20	–	–	Good,	Designate closets; time tables; guard shafting and fly wheel,	Complied.
M. Curtis,	Boots and shoes,	21	4	–	–	Good,	None,	–
Badger Bros,	Stone polishing; machine shop,	28	–	–	–	Fair,	None,	–
E. W. Gourd,	Hosiery,	5	20	–	–	Fair,	None,	–
Quincy Granite Company,	Granite,	18	–	–	–	Good,	None,	–
Carey Bros,	Granite,	32	–	–	–	Good,	None,	–
T F. Mannex,	Granite,	30	–	–	–	Good,	None,	–
Fallon & Sons,	Granite,	35	–	–	–	Good,	None,	–
Patrick Cavnaugh,	Stone polishing,	6	–	–	–	Good,	None,	–
A. T. Rodger's Granite Company,	Granite,	55	–	–	–	Good,	None,	–

DISTRICT No. 9 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
City of Quincy — Concluded.								
Wollaston Steam Laundry, . .	Laundry, . .	5	15	–	1	Good, .	None, ...	–
Tubular Rivet Works, . .	Machinery rivets,	101	34	–	–	Good, .	None, ...	–
Mellen, Bray & Co., . . .	Glove fasteners, .	2	23	–	–	Good, .	None, ...	–
Wollaston Foundry Company, .	Castings, . .	70	–	–	–	Good, .	Elevator gates, ...	Complied.
Thayer Heater Company, . .	Steam heaters, .	8	–	–	–	Good, .	Guard belts, ...	Complied.
John E. Drake & Co., . . .	Boots and shoes, .	82	23	–	–	Good, .	Guard shafting; time tables, . .	Complied
Quincy Patriot, ...	Newspaper, .	11	3	–	–	Fair, .	Post time tables, ...	Complied.
RANDOLPH.								
John Peach, ...	Shoes, . . .	150	35	–	–	Fair, .	None, ...	–
William P. O'Brien, . . .	Boots, . . .	85	4	–	–	Good, .	None, ...	–
W. F. Barrett & Co., . . .	Boots and shoes, .	18	–	–	–	Good, .	None, ...	–
W. Gibbons & Sons, . . .	Boots and shoes, .	22	3	–	–	Good, .	None, ...	–
Bryant, Case & Co , . . .	Shoes, . . .	67	11	–	3	Good, .	None, ...	–
ROCKLAND.								
Rockland Manufacturing Co., .	Boots and shoes, .	100	25	–	1	Good, .	None, ...	Complied.
Chapman, Calley & Co., . .	Boots and shoes, .	110	25	–	–	Good, .	Post time tables; guard fly wheel,	
Rockland Standard, . . .	Printing, . .	4	1	–	–	Good, .	Time tables, ...	Complied.
John Spense, ...	Bleaching of leather, . .	14	–	–	1	Good, .	Certificate for children, . . .	Complied.
John Spense, ...	Heels, . . .	3	8	–	–	Good, .	Post time table, ...	Complied.
French & Hall, ...	Boots and shoes, .	68	15	–	–	Good, .	Post time table; certificate, . .	Complied.

French, Hall & Co., . . .	Small nails, tacks,	9	1	–	–	Good, .	None, ...	–
C. E. Lane, ...	Boots and shoes, .	39	11	–	–	Good, .	Time tables; elevator safety, . .	Complied.
C. A. Townsend, ...	Stitching, . .	4	–	–	–	Good, .	None, ...	–
W. H. Blaisdell, ...	Stitching, . .	4	12	–	–	Good, .	Post time table, ...	Complied.
J S. Turner, ...	Boots and shoes, .	170	15	–	–	Good, .	Guard fly wheel and pulley, . .	Complied.
Jason, Smith & Co., . . .	Shoes, machinery,	8	–	–	–	Good, .	None, ...	–
Harvell & Co , ...	Boots and shoes, .	88	12	–	1	Good, .	Designate closets, ...	Complied.
Henry D. Smith, ...	Hosiery, . .	7	11	–	–	Good, .	None, ...	–
F. E. Nesmith, ...	Paper boxes, .	4	31	–	–	Good, .	Elevator safety; time tables, . .	Complied.
STOUGHTON.								
Wallace Elliott, ...	Shoes, . . .	92	23	–	–	Good, .	None, ...	–
F. M. Packard, ...	Shoes, . . .	31	6	–	–	Good, .	None, ...	–
Novelty Paper Box Company, .	Paper boxes, .	2	18	–	–	Good, .	None, ...	–
J. & H. Fitzpatrick, . . .	Boots and shoes, .	87	15	–	–	Good, .	Time tables, ...	Complied.
Stoughton Rubber Company, .	Rubber clothing, .	40	11	1	–	Good, .	None, ...	–
J. G. Phinney Counter Company,	Boot and shoe counters, . .	121	51	–	32	Good, .	None, ...	–
G. F. Walker, ...	Lasts, . . .	15	–	–	1	Fair, .	None, ...	–
Central Laundry, ...	Laundry, . .	5	3	–	1	Fair, .	Post time tables, ...	Complied.
Geo. E. Belcher, ...	Last block fastener, . .	7	–	–	2	Fair, .	None, ...	–
Upham Bros. & Co., . . .	Boots and shoes, .	65	7	–	3	Good, .	None, ...	–
Geo. A. Cooper, ...	Bonnet wire, .	1	2	–	–	Fair, .	Post time tables, ...	Complied.
Reynold Bros., ...	Boots and shoes, .	17	3	–	–	Fair, .	None, ...	–
WALPOLE.								
Walpole Chemical, . . .	Chemicals, . .	27	2	–	–	Good, .	None, ...	–
Willard Lewis, ...	Cotton batting, .	48	2	–	–	Fair, .	Guard fly wheel, ...	Complied.
A. E. Stetson, ...	Leather goods, .	8	–	–	–	Fair, .	Elevator safety and hatchway, .	Complied.
Union Mills, ...	Cotton batting, .	7	7	–	–	Poor, .	None, ...	–

DISTRICT NO. 9 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Walpole — Concluded.								
S Grey & Sons,	Coloring,	18	–	–	–	Good,	None,	–
William Mahoney,	Mattresses,	5	2	–	–	Good,	None,	–
E P. Stetson,	Card clothing,	6	1	–	–	Good,	None,	–
F. W. Bird & Son,	Paper,	94	18	–	–	Fair,	Guard shafting; designate closets; post time tables,	Complied.
Hollingsworth & Vose,	Paper,	60	–	–	–	Fair,	None,	–
WEYMOUTH.								
J. E. Mann,	Wool scouring,	50	–	–	–	Good,	None,	–
Strong & Carroll,	Boots and shoes,	225	60	–	6	Good,	None,	–
Edwin Clapp,	Fine shoes,	172	48	–	5	Good,	None,	–
M. Sheehy & Co,	Boots and shoes,	65	10	–	–	Good,	None,	–
M. Dizer & Co,	Boots and shoes,	350	100	–	1	Good,	None,	–
R G. Haskell,	Boots and shoes,	175	25	–	1	Good,	None,	–
Bradley Fertilizer Work,	Fertilizers acids,	200	2	–	–	Fair,	None,	–
Bay State Hammock Company,	Hammocks,	7	7	–	–	Good,	None,	–
S. Graves & Son,	Furniture,	12	–	–	–	Good,	None,	–
WHITMAN.								
Whitman Paper Box Company,	Paper boxes,	10	50	–	–	Fair,	None,	–
Bryant & King,	Cutting of calf-skins,	17	–	–	–	Fair,	None,	–

J. W. Coombs,	Cutting of calf-skins,	7	–	–	–	Good,	None,	–
J. Q A. Healy,	Mats,	3	–	–	–	Good,	None,	–
G A Gurney,	Steel shoe shanks,	14	5	–	2	Fair,	None,	–
Walter Truefoot,	Small nails,	5	–	–	–	Fair,	None,	–
F. M. Spencer,	Boxes,	20	–	–	–	Good,	None,	–
C. H Bonney,	Woodworker,	7	–	–	–	Good,	None,	–
A. A. Healy,	Sheet heeling,	1	4	–	–	Fair,	None,	–
D B. Gurney,	Tacks and small nails,	37	3	–	5	Fair,	None,	–
Jenkins Bros. & Co.,	Steel shanks; coffins, caskets,	22	3	–	1	Good,	None,	–
A. R Jones,	Boots and shoes,	220	130	–	4	Good,	None,	–
Atwood Bros,	Boxes,	49	–	–	–	Good,	None,	–
Dunbar & Rhodes,	Eyelet,	31	9	–	–	Good,	None,	–
Smith & Stoughton,	Boots and shoes,	106	26	.	.	Good,	Post time tables,	Complied.
Dunbar, Hobart & Co.,	Tacks and small nails,	125	50	–	1	Fair,	None,	–
WRENTHAM.								
Cowell, Hall & Co.,	Jewelry,	30	8	–	–	Good,	None,	–
Daniel Brown,	Straw goods,	125	80	–	–	Good,	None,	–
F. M. Fales & Co.,	Dressed lumber and boxes,	27	–	–	–	Good,	None,	–
DISTRICT No. 10,							JAMES R. HOWES, *Inspector.*	
ADAMS.								
Barden Stationery Company,	Stationery,	1	6	–	1	Good,	Children's certificates; time notices posted,	Complied.
Renfew Manufacturing Company,	Ginghams,	220	230	1	31	Good,	None,	–

DISTRICT NO. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Adams — Concluded.								
L. L Brown Paper Co., lower mill,	Ledger paper, .	30	55	9	6	Good, .	Guard shafting and elevator openings, ...	Complied.
L L. Brown Paper Co., stone mill,	Ledger papers, .	22	36	–	8	Good, .	Belts guarded, and bars to hoistways,	Complied.
B. F. Phillips & Son, . . .	Woollen cloths, .	79	27	3	15	Fair, .	None, ...	–
Graylock, No. 2, ...	Ginghams, . .	42	28	2	5	Good, .	None, ...	–
Adams Electric Light & Power Co,	Electric power for railroad, . .	3	–	–	–	Good, .	Guard fly wheel on engine, . .	Complied.
United Zylonite Company, . .	Novelties, . .	289	123	5	24	Good, .	None, ...	–
American Zylonite Company, .	Zylonite stock, .	102	8	1	1	Good, .	None, ...	–
Renfew, No 2, ...	Ginghams, . .	350	400	16	72	Good, .	None, ...	–
Berkshire Cotton Manuf'g. Co, .	Cotton cloth, .	70	30	1	9	Good, .	Guard fly wheel and engine crank,	Complied.
Plunkett, No. 2, ...	Cotton yarn, .	14	18	–	5	Good, .	Children's certificates, . . .	Complied
W. C. Plunkett & Sons, No. 3, .	Cotton warps, .	55	52	–	8	Good, .	Guard shafting, ...	Complied.
Bowen & Cheesbro & Company,	Wagons & sleighs,	6	–	–	–	Good, .	Guard shaft and band saws, . .	Complied.
H. J. Arnold & Son, . . .	Barrels & lumber,	17	–	–	–	Good, .	Guard belts, ...	Complied.
E B. Cook, ...	Kindling wood, .	5	–	–	–	Good, .	Guard shaft, ...	Complied.
M. C. Richmond, ...	Flour and feed, .	5	–	–	–	Good, .	Guard shaft and fly wheel, . .	Complied.
Renfew Manufacturing, No. 1, .	Cotton yarn, .	66	32	1	11	Good, .	Guard shaft, ...	Complied.
Allen Iron Works, . . .	Paper machinery,	16	–	–	–	Good, .	Guard band saw, ...	Complied.
Adams Bro. & Co, . . .	Cotton yarn, .	38	27	1	2	Fair, .	None, ...	–
ASHFIELD.								
A. C. White, ...	Lumber, . .	4	–	–	–	Good, .	None, ...	–

Ashfield Creamery,	Butter,	4	–	–	–	Good,	None,	–
L. Gardner & Son,	Wood turning,	4	–	–	–	Good,	None,	–
BECKET.								
Becket Silk Company,	Spool silk,	8	16	–	2	Good,	Children's certificate; guard shafting,	Complied.
M. E. Ballou & Son,	Coal and wood baskets,	8	–	–	–	Good,	Guard belt, band saw and shaft,	Complied.
BERNARDSTON.								
Crystal Cutlery Company,	Butchers' cutlery,	10	–	–	–	Good,	None,	–
C. A. Cook,	Heavy wagons,	2	–	–	–	Good,	None,	–
H. Hale,	Grist mill,	7	–	–	–	Good,	None,	–
BUCKLAND.								
Lamson Manufacturing Co.,	Cutlery,	205	15	–	10	Good,	Guard shafting,	Complied.
H. A. Bowen,	Paper boxes,	1	8	–	–	Good,	None,	–
J. A. Richmond,	Sash and doors,	4	–	–	–	Good,	None,	–
CHESHIRE.								
W. B. Dean,	Lime barrels,	35	–	–	–	Good,	Guard shafting,	Complied.
Cheshire Harbor Warp Mill,	Cotton warps,	20	22	–	7	Good,	None,	–
Richmond Iron Works,	Pig iron,	10	–	–	–	Good,	None,	–
John Kendall,	Cheese,	2	–	–	–	Good,	None,	–
Cheshire Glass Sand Company,	Screened sand,	4	–	–	–	Good,	None,	–
CHARLEMONT.								
Preston Baker,	Flour and feed,	5	–	–	–	Good,	None,	–

DISTRICT NO. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
CONWAY.								
Conway Woollen Company,	Woollen goods,	65	17	–	4	Good,	None,	–
Tucker & Cook,	Cotton yarn,	25	18	–	3	Good,	Sanitary,	Complied.
Tucker & Cook Lower Mills,	Cotton yarn,	24	12	–	1	Poor,	Guard shafting; sanitary,	Complied.
Conway Creamery,	Butter,	10	–	–	–	Good,	Guard shafting,	Complied.
CLARKSBURG.								
Schaghicooke Woollen Company,	Cassimeres,	85	50	–	9	Poor,	Guard shafting; window openings,	Complied.
F. W. Welsby,	Flour and grain,	4	–	–	–	Good,	None,	–
Clarance W. Gallup,	Box shop,	11	–	–	–	Good,	None,	–
John H. Bellows,	Dressed lumber,	3	–	–	–	Good,	Guard pulley, belt and shaft,	Complied.
COLRAIN.								
Griswold Manufact'ing Co, No. 2,	Fine and light cottons,	49	45	–	11	Fair,	Better sanitary arrangements; guard fly wheel on engine,	Complied.
Griswold Manufact'ing Co, No. 1,	Fine and light cottons,	69	35	–	19	Fair,	Better water-closets,	Complied.
Canedy & Field,	Print cloths,	45	24	–	7	Fair,	Children's certificate; guard shafting,	Complied.
Hilman & Kendrick,	Lumber and butter boxes,	3	–	–	–	Good,	Guard belt,	Complied.
Kendrick & Temple,	Lumber,	6	–	–	–	Good,	None,	–
F. W. Perrington,	Butter boxes,	3	–	–	–	Good,	None,	-

DALTON.								
Renfew,	Cotton yarn,	20	19	–	–	Good,	None,	–
C. J. Kitteridge & Co.,	Woollen cloth,	60	10	–	2	Fair,	Guard shafting,	Complied.
Byron Weston,	Ledger papers,	64	136	–	6	Good,	Guard crank on engine,	Complied.
C. Glennon & Son,	Woollens,	65	65	–	14	Good,	Guard shafting,	Complied.
Old Berkshire Mill,	Ledgers and bond,	38	80	–	–	Good,	Guard shafting,	Complied.
Dalton Shoe Company,	Shoes,	67	33	–	8	Good,	Children's certificates,	Complied.
Crane & Co.'s Stone Mill,	Ledgers and bond,	20	20	–	–	Good,	None,	–
Q and W. M. Crane,	Ledgers and bond,	57	113	–	2	Good,	Guard shaft; new elevator cable,	Complied.
DEERFIELD.								
Bernard Lepshyler,	Pocket books,	24	6	–	–	Good,	Designate closets; time notices,	Complied.
J. B. Budges & Co.,	Lumber,	8	–	–	–	Good,	Guard belt,	Complied.
EGREMONT.								
Dalzell Axle Co.,	Steel axles,	60	–	–	–	Fair,	Guard shafting,	Complied.
Egremont Manufacturing Co.,	Pants and overalls,	5	17	–	1	Good,	Time notices; children's certificate,	Complied.
ERVING.								
C. Stone,	Piano cases,	8	–	–	–	Good,	None,	–
Allen & Brooks,	Lock corner boxes,	12	–	–	–	Good,	Guard belts,	Complied.
Washburn & Hayward,	Chairs,	70	–	–	–	Good,	Guard main belt,	Complied.
Washburn & Eddy,	Sash and doors,	6	–	–	–	Good,	None,	–
N. Rankin,	Wood seat chairs,	3	–	–	–	Good,	None,	–
J. C. Wheeler,	Socks and overalls,	1	16	–	–	Fair,	Time notice; guard shaft,	Complied.
Miller's Falls Manufacturing Co.,	Light hardware,	168	10	–	4	Fair,	Children's certificates; time notices; sanitary condition; guard shafting,	Complied.

DISTRICT NO. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
FLORIDA.								
Sidney Tower,	Dressed lumber,	3	–	–	–	Good,	None,	–
GILL.								
Turner's Falls Lumber Company,	Dimension lumber,	54	–	–	–	Good,	None,	–
Turner's Falls Kindling Wood Co.,	Kindling,	5	15	–	–	Good,	Guard shafting in kindling-wood mill,	Complied.
New England Fibre Company,	Sulphite pulp,	45	–	–	–	Good,	Guard belt and shafting,	Complied.
GREENFIELD.								
Charles N. Wood,	Paper boxes,	1	6	–	–	Good,	Designate water-closet and time notices,	Complied.
Charles R. Field,	Baby carriages,	25	–	–	–	Good,	None,	–
Wells Bros. & Company,	Screw-cutting machinery,	60	–	–	–	Good,	None,	–
Charles Wing,	Pattern shop,	3	–	–	–	Good,	None,	–
Cutter, Lyons & Field,	Shoes,	70	45	–	1	Good,	Guard shafting; designate water-closet,	Complied.
Barber & Lamb,	Grist mill,	3	–	–	–	Good,	None,	–
Wiley Russell Manufg. Company,	Screw-cutting machinery,	125	–	–	3	Good,	Guard shafting,	Complied.
Smith & Mitchell,	Brick,	30	–	–	–	Good,	Guard shafting,	Complied.
A. T. Towle & Son,	Silver plating,	69	9	–	–	Good,	Time notice; guard shafting,	Complied.
V. J. Reece,	Screw plate,	9	–	–	–	Good,	None,	–

J O Newton,	Soap,	3	–	–	–	Good,	None,	–
Warner Manufacturing Company,	Plated knives,	54	2	–	–	Good,	Guard shafting,	Complied.
Rugg Manufacturing Company,	Snow shovels,	20	–	–	–	Good,	None,	–
Straiton Bros.,	Spirit levels,	8	–	–	–	Good,	None,	–
Austin & Gains,	Dressed lumber,	4	–	–	–	Good,	Guard band saw and fly wheel on engine,	Complied.
B. F. Noyse & Co.,	Hardware,	10	–	–	–	Good,	None,	–
H. E. Davis,	Laundry,	3	3	–	–	Good,	Guard belt,	Complied.
Greenfield Electric Light Co.,	Electric light,	5	–	–	–	Good,	Guard belt,	Complied.
T. Mowry & Son,	Electrotype,	11	10	–	–	Good,	Designate water-closets,	Complied.
GREAT BARRINGTON.								
Everett Woollen Mills,	Woollen cloth,	114	96	2	18	Poor,	Children's certificates; sanitary; guard shafting,	Complied.
C. R. Brewer,	Lumber & turning,	18	–	–	–	Good,	Guard shafting and belt,	Complied.
Owen Paper Company, No. 1,	Writing paper,	20	70	–	1	Fair,	Guard shafting, belt and hoistway,	Complied.
Owen Paper Company, No. 2,	Machine shop,	4	–	–	–	Good,	None,	–
Monument Mills, No. 1,	Bed spreads,	56	49	–	–	Good,	None,	–
Monument Mills, No. 2,	Bed spreads,	60	63	–	24	Good,	None,	–
HINSDALE.								
Hinsdale Bros., No. 1,	Woollen cloth,	148	67	1	23	Good,	Guard shafting,	Complied.
Hinsdale Bros., No. 2,	Woollen cloth,	66	48	–	–	Good,	None,	–
Denell & Hall,	Woollen cloth,	35	15	–	2	Good,	Guard shafting,	Complied.
Hinsdale Basket Company,	Baskets,	4	–	–	–	Good,	None,	–
LEE.								
Gross Bros.,	Marble,	8	–	–	–	Good,	Guard shafting and fly wheel,	Complied.
E. P. Tanner,	Machinery,	17	–	–	–	Good,	Guard shafting,	Complied.
Smith Paper Company,	Paper,	32	11	–	–	Poor,	Guard shafting; put guard rail around engine,	Complied.

DISTRICT NO. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	NUMBER EMPLOYED.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Lee — Concluded.								
Columbia,	Manilla paper; paper-machine,	39	15	–	–	Poor,	Guard hoistways,	Complied.
Thistle Wire Company,	Wire,	14	3	–	–	Good,	Designate water-closets,	Complied.
Hawk & Duclos,	Cotton shirts,	1	19	–	–	Good,	Time notice,	Complied.
Benton Bros.,	Newspaper,	13	12	–	–	Fair,	Guard elevator opening,	Complied.
P. C. Bard & Co ,	Paper pulp,	3	–	–	–	Good,	Guard hoistway door,	Complied.
P. C. Bard,	Bristol board,	9	4	–	–	Fair,	Guard fly wheel on engine,	Complied.
Prentiss S. Bard,	Blotting paper,	10	7	–	–	Good,	None,	–
H. B. & S. May,	Bristol and card board,	4	7	–	–	Good,	None,	–
H. B. & S. May Paper Company,	Paper pulp,	6	13	–	–	Good,	Guard belt and shaft in engine room,	Complied.
John Claflin,	Machine and foundry,	4	–	–	–	Good,	None,	–
Herbert Paper Company,	Letter and fine paper,	75	100	–	5	Good,	Time notice; sanitary,	Complied.
LENOX.								
Lenox Glass Works,	Skylight glass,	7	–	–	–	Good,	None,	–
Centennial Mill,	Wood pulp,	9	–	–	–	Good,	Guard shafting,	Complied.
Niagara Mill,	Wood pulp.	7	–	–	–	Good,	None,	–
Lewis Chapin,	Grist mill,	3	–	–	–	Good,	None,	–
Valley Mill,	Newspaper,	34	13	–	–	Good,	None,	–

MONTAGUE.								
Clark Machine Company,	Machinists,	30	–	–	–	Good,	None,	–
Montague Paper Company,	Newspaper,	175	34	–	–	Fair,	None,	–
Shawmut Manufacturing Co.,	Pressed paper,	6	–	–	–	Good,	Guard shafting,	Complied.
Geo. F. Littlefield Shoe Co.,	Shoes,	51	19	–	4	Good,	None,	–
Russell Manufacturing Co ,	Cutlery,	455	75	7	28	Fair,	Guard shafting,	Complied.
Keith Paper Company,	Writing paper,	56	110	–	–	Good,	None,	–
Turners Falls Paper Company,	Newspaper,	44	11	–	–	Good,	Guard shafting,	Complied.
Turners Falls Cotton Mills,	Cotton cloth,	50	125	2	26	Fair,	Sanitary,	Complied.
Turners Falls Reporter,	Newspaper and job printing,	4	3	–	–	Good,	Guard shafting,	Complied.
Montague Rod Company,	Fishing rods,	31	10	–	–	Good,	None,	–
Montague Paper Company,	Newspaper,	180	35	–	–	Good,	Repair elevator bars,	Complied.
MONROE.								
W. H. Allen & Sons,	Lumber,	4	–	–	–	Good,	None,	–
Warren Tower,	Box boards,	3	–	–	–	Good,	None,	–
H. Whitcomb,	Dressed lumber,	3	–	–	–	Good,	None,	–
Fred. S. Hicks,	Box cases,	3	–	–	–	Good,	None,	–
James Ramage,	Pulp,	48	–	–	5	Good,	None,	–
James Ramage & Co.,	Paper and box board,	34	–	–	–	Good,	Guard shaft and belt,	Complied.
MONTEREY.								
Berkshire Hills Creamery,	Butter,	3	–	–	–	Good,	None,	–
J. D. Hadsell,	Lumber & grain,	4	–	–	–	Good,	None,	–
NEW MARLBOROUGH.								
Frank Alexander,	Lumber,	2	–	–	–	Good,	None,	–
Barber & Williams,	Whips,	7	4	–	1	Good,	Certificates; time notice; guard shafting,	Complied.

DISTRICT No. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
NORTH ADAMS.								
Johnson Manufacturing Co., .	Ginghams, . .	110	230	1	36	Good, .	Guard crank on engine, ...	Complied.
Graylock, No. 1, ...	Ginghams, . .	150	175	–	28	Good, .	Guard shafting; sanitary; designate water-closets, . . .	Complied.
Freeman Manufg. Co , Stone Mill,	Print cloths, .	4	24	–	–	Good, .	Guard hoistway door, . . .	Complied.
C. T. Sampson, Manufg. Co., .	Shoes, . . .	234	116	–	9	Good, .	Children's certificates, . . .	Complied.
Arnold Print Works, . . .	Cotton prints, .	644	84	–	52	Good, .	Guard shafting, and hoistway doors,	Complied.
H. C. Cady, ...	Shoes, . . .	90	110	–	–	Good, .	Certificates; guard shafting, . .	Complied.
Eclipse Mill, ...	Print cloths, .	40	110	–	–	Good, .	Guard shafting, and hoistway doors,	Complied.
Beaver Mill, ...	Print cloths, .	52	78	–	14	Poor, .	Guard shafting; sanitary, . .	Complied.
Freeman Manufacturing Co., .	Print cloths, .	356	61	–	14	Good, .	None, ...	–
Canedy & Wilkenson, . . .	Shoes, . .	138	30	–	3	Good, .	Guard shafting and fly wheel on engine, ...	Complied.
W. E. Cady & Co., ...	Shoes, . . .	190	125	1	26	Good, .	Guard shafting, ...	Complied.
Eagle Mill, ...	Print cloths, .	118	58	–	14	Good, .	None, ...	–
Esty Mill, ...	Print cloths, .	5	28	–	4	Good, .	None, ...	–
N. L. Millard, ...	Shoes, . . .	130	77	1	26	Fair, .	Time notice; guard shafting, .	Complied.
James Hunter & Son, . . .	Woollen machinery, . .	102	–	–	–	Good, .	Guard shafting, ...	Complied.
E. J. Cary, ...	Rags, . . .	30	5	–	2	Good, .	None, ...	–
North Adams Manufacturing Co.,	Cassimeres, .	119	56	–	7	Good, .	Sanitary, ...	Complied.
Burtlett Bros., ...	Windows and doors, . .	29	–	–	1	Good, .	Children's certificates, . . .	Complied.
S. B. Dibble, ...	Finishing lumber,	18	–	–	–	Good, .	None, ...	

D. W. Rising,	Paper boxes,	5	25	–	–	Good,	None,	–
E. R. Hayden,	Shoe boxes,	3	16	–	–	Good,	Time notices; guard shaft,	Complied.
P. G. Gardner,	Electric fuse,	6	–	–	–	Good,	None,	–
Tunnel Light Station,	Light for tunnel,	4	–	–	–	Good,	None,	–
Advance Job Print Company,	Letter heads, etc.,	4	–	–	–	Good,	Guard shafting,	Complied.
A. W. Hodge,	Meal,	7	–	–	–	Good,	Guard shafting and belt,	Complied.
McDoughall & Barlow,	Machinery,	5	–	–	–	Good,	None,	–
North Adams Steam Laundry,	Laundry,	6	6	–	–	Good,	Guard shafting,	Complied.
C. H. Jones,	Carpet cleaning,	3	–	–	–	Good,	None,	–
Rand & Son,	Flour and marble dust,	22	1	–	–	Good,	Time notice,	Complied.
Blackington Woollen Company,	Fancy cassimeres,	232	118	–	22	Good,	Guard shafting,	Complied.
ORANGE.								
J. B. Reynolds,	Shoes,	125	25	2	10	Good,	Certificates; guard shafting,	Complied.
Rodney Hunt Machine Company,	Water wheels,	110	–	–	–	Good,	Guard shafting,	Complied.
Geo. H. Lawrence,	Packing cases,	6	–	–	–	Good,	None,	–
Chase Turbine Manuf'g Co.,	Turbine w't'r wh'ls,	41	–	–	1	Good,	Certificates; time notices,	Complied.
Orange Furniture Company,	Furniture,	22	–	–	1	Good,	Guard shafting,	Complied.
New Home Sewing Machine Co.,	Sewing machines,	507	–	–	–	Good,	Guard shafting,	Complied.
Orange Electric Light Company,	Light,	3	–	–	–	Good,	None,	–
Orange Journal,	News and job printing,	5	–	–	–	Good,	None,	–
Troy Steam Laundry,	Laundry,	3	4	–	–	Good,	None,	–
H. R. Stowell,	Furniture,	20	–	–	–	Good,	Guard belt and shaft,	Complied.
PITTSFIELD.								
Crane & Co.,	Bank-note paper,	13	12	–	–	Good,	Guard gear on plater,	Complied.
Russell & Jones,	Clocks,	112	18	–	–	Good,	Guard shafting,	Complied.
D. M. Collins & Co.,	Knit goods,	22	178	–	10	Good,	Guard shafting,	Complied.
H. S. Russell,	Steam boilers,	10	–	–	–	Good,	Guard belts and shafting,	Complied.

DISTRICT NO. 10 — *Continued.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
Pittsfield — Concluded.								
Wm. Clark,	Machinists,	40	–	–	–	Good,	Guard shafting,	Complied.
Thomas L. Pomeroy (Mill street),	Woollen goods,	68	20	1	2	Fair,	Designate water-closets,	Complied.
Thomas L. Pomeroy (West Houston street),	Woollen goods,	42	20	–	–	Good,	None,	–
Q. A. Ward,	Carpenter shop,	11	–	–	–	Good,	Guard shafting and fly wheel,	Complied.
T. R. Glenzts,	Mantels and mouldings,	16	–	–	–	Good,	None,	–
Robins & Gamwell,	Plumbing and heating,	25	–	–	–	Good,	Guard shafting,	Complied.
Berkshire Overall Company,	Overalls,	4	28	–	1	Good,	Guard shafting,	Complied.
W. C. Stevenson Mfg. Company,	Spools & shuttles,	50	–	1	2	Good,	Guard shafting,	Complied.
Bay State Knitting Company,	Underclothing,	14	30	1	1	Good,	Guard shafting,	Complied.
Pittsfield Manufg. Company,	Woollen yarns,	25	–	1	2	Good,	New cable for elevator,	Complied.
Berkshire Tack Company,	Sacks,	4	–	–	–	Good,	None,	–
Pittsfield Shoe Company,	Shoes,	40	10	–	3	Good,	None,	–
Cheshire Shoe Company,	Shoes,	35	85	–	8	Good,	Certificates; time notice,	Complied.
Pontoosuc Woollen Mills,	Woollen blankets,	150	100	–	17	Poor,	Certificate; guard shafting; sanitary,	Complied.
Wilson & Horton,	Woollen cloths,	147	69	1	7	Good,	Certificates; guard shafting,	Complied.
May & Chappell,	Machinists' tools,	11	–	–	–	Good,	None,	–
Sissons & Robinson,	Paper boxes,	3	14	–	1	Good,	None,	–
Sprague & Bramer,	Shirts,	18	93	–	4	Good,	Guard belt and shafting,	Complied.
New York Laundry,	Laundry,	4	1	–	–	Fair,	Guard belt and shafting,	Complied.

R. P. Purdy,	Paper boxes,	2	9	–	–	Poor,	Sanitary,	Complied.
Bay State Laundry,	Laundry,	4	2	–	–	Good,	None,	–
Pittsfield Eagle,	Job printing,	15	6	–	–	Good,	Guard shafting,	Complied.
The Journal,	Daily paper,	12	3	–	–	Good,	None,	–
Henry & Blan,	Rag sorting,	6	5	–	–	Good,	None,	–
A. H. Rice & Co.,	Silk thread,	17	47	–	7	Good,	Guard shafting,	Complied.
Morse Brothers,	Silver plating,	5	–	–	1	Good,	Children's certificates,	Complied.
J. L. & T. D. Peck,	Sheeting,	88	40	1	13	Good,	None,	–
C. E. Merrill,	Doors, blinds and carpenter shop,	60	–	–	–	Good,	Ground shafting and crank on engine,	Complied.
ROWE.								
Davis Sulphur Ore Company,	Mining sulphur ore,	85	–	–	–	Good,	Guard fly wheel on engine, and shafting,	Complied.
SHEFFIELD.								
Curtis Bros.,	Brandy still,	10	–	–	–	Good,	None,	–
SHELBURNE.								
O. S. Fay,	Lumber,	9	–	–	–	Good,	None,	–
Mayo Silk Company,	Machine twist,	10	38	–	–	Good,	None,	–
D. Rush & Son,	Cigar boxes,	2	1	–	–	Good,	Guard belt,	Complied.
Elmer & Howes,	Patent shingles,	3	–	–	–	Good,	None,	–
Frost & Bartlett,	Flour and meal,	2	–	–	–	Good,	None,	–
Goodall Bros.,	Machinists' tools.	7	–	–	–	Good,	None,	–
H. H. Mayo,	Hardware and tools,	27	–	–	–	Good,	Guard shafting,	Complied.
SAVOY.								
Frank Ford,	Dimens'n lumber,	4	–	–	–	Good,	None,	–
F. W. Adams,	Woollen goods,	76	24	–	4	Poor,	Children's certificates; sanitary; guard shafting.	Complied.
Chas. E. Callander,	Paper,	38	5	–	–	Fair,	Guard shafting and gears,	Complied.

DISTRICT NO. 10 — *Concluded.*

NAME OF FACTORY OR WORKSHOP.	Goods Manufactured.	Number Employed.				Sanitary Condition.	Orders Given.	Compliances.
		Males.	Females.	Under 14.	14 to 16.			
SANDISFIELD.								
O. D. Case & Co.,	School-house furniture,	12	–	–	–	Good,	Guard shafting and elevator openings,	Complied.
J. C. Greenleaf Manufg. Co ,	Wooden ware,	16	2	–	1	Good,	Children's certificates; time notice,	Complied.
TYRINGHAM.								
Chas. Stedman,	Lumber & grain,	4	–	–	–	Good,	Guard belt,	Complied.
M. W. Stedman & Co.,	Hay rakes,	5	–	–	–	Good,	Guard belt,	Complied.
WILLIAMSTOWN.								
Edward Towne,	Grist mill,	2	–	–	–	Good,	None,	–
Williamstown Manufg. Co.,	Print cloths,	85	95	1	25	Good,	None,	–
WENDELL.								
Ham Wood Pulp Company,	Wood pulp,	7	–	–	–	Good,	None,	–
C. S. Stone,	Piano cases,	21	–	–	–	Good,	Guard belt and shafting,	Complied.
Farley Paper Company,	Card board,	20	–	–	–	Good,	None,	–

REPORT OF THE DETECTIVE DEPARTMENT.

The officers of the detective branch of the District Police, with but few exceptions, are men trained to the special requirements of detective duty, and have shown themselves at all times anxious to sustain their reputations for efficiency, and in their deportment have given no cause for reproach in any way, and no complaint of misconduct has been made during their service.

This branch of the department has performed its work in a manner satisfactory to the district attorneys and other court officials, who, from personal knowledge, have stated that the detective officers of the District Police are efficient and upright servants of the Commonwealth. It is our pride that no stain has rested upon the records of this branch of the department, from its organization to the present time, and we intend to merit the continuance of official approbation and public respect.

Special Duties.

Officers of the force have been called upon for special duty at Braintree, South Framingham, Haverhill, Lake Waldron, Boston, Plymouth, Cottage City, Highland Lake, Worcester, Clinton, Salisbury Beach, Sturbridge, Great Barrington, South Weymouth, Barre, Ashby, Athol, Brockton, Taunton and Belchertown.

Arrests.

Arrests have been made to the number of 525.

Among the most important cases investigated are the following: —

Patrick J. Hanley, *alias* Corkey Hanley. Crime, breaking and entering. Found guilty, and sentenced to four years in State Prison. Hanley is a notorious thief, has served a sentence in the Massachusetts Reformatory. Hanley, with four others, made a daring escape from the Salem jail, was recaptured in New York City, and was brought back on a requisition.

WILLIAM W. TYLER. Crime, selling mortgaged property. Found guilty, and sentenced to nine months in the House of Correction. Tyler was brought back from the State of New Jersey on a requisition; he has a bad reputation, and has served time for a like offence.

CHARLES KNAPP. Crime, swindling. Is now awaiting trial.

HARRY PUTMAN. Crime, robbery. Defaulted his bail.

SAMUEL L. RICHARDSON. Crime, adultery. Awaiting trial.

SARAH E. FOWLER. Crime, adultery. Awaiting trial.

WILLIAM A. MCCLURE, *alias* WILLIAM WATSON. Crime, receiving stolen goods. Found guilty, and sentenced to ten months in the House of Correction. McClure has been indicted in Suffolk County for robbery.

WILLIAM L. D. NUTE. Crime, larceny of team. Found guilty, and sentenced to four years in State Prison. Nute is a bad and dangerous thief, and has served previous sentences for horse stealing and larceny.

GEORGE JACKMAN. Crime, false pretence. Found guilty, and sentenced to one year in the House of Correction.

JOHN BROWN. Crime, larceny from building. Awaiting trial.

CORNELIUS DONOVAN. Crime, breaking and entering. Awaiting trial.

WILLIAM MCKENNEY, *alias* WILLIAM DREW, *alias* several other names. Crime, larceny of team. Found guilty, and sentenced to twenty-five years in State Prison. McKenney is a notorious thief, and was indicted under the habitual criminal act. He is known to have stolen teams in the following places: Lowell, Newburyport, Rowley, Haverhill, Ipswich, Wilmington, Middleton, Cambridge, Westborough, Worcester and several other places.

WILFRED J. AUGHTON, *alias* W. J. ABBOTT, *alias* several other names. Crime, larceny of team. Found guilty, and sentenced to five years in State Prison. Aughton is a notorious thief, and has served previous sentences for like offences in Middlesex and Worcester counties.

WILLIAM B. CHASE, *alias* N. B. HOWE, *alias* several other names. Crime, swindling. Found guilty, and sentenced to three years in State Prison. Chase is a notorious confidence man, has served several sentences, and is now wanted in many places.

WILLIAM H. BROOKS. Crime, sodomy. Brooks is under indictment in the superior court, and he defaulted his bail.

FREDERIC KIMBALL. Crime, embezzlement and larceny. Found guilty, and sentenced to seven years in State Prison.

ELI H. WHITNEY. Crime, incendiarism, three counts. Awaiting trial.

CHARLES SMYTH, *alias* CHARLES BELCHER. Crime, embezzlement. Found guilty, and sentenced to two years in House of Correction.

JOHN DENNING. Crime, breaking and entering. Awaiting trial.

CORNELIUS SHEEHAN. Crime, breaking and entering. Found guilty, and sentenced to six years in State Prison.

ARTHUR FISHER. Crime, larceny from person. Awaiting trial.

WILLIAM B. UNDERWOOD. Crime, forgery. Awaiting trial.

ARTHUR N. NEIL. Crime, breaking and entering. Found guilty, and sentenced to five years and three months in the House of Correction.

JOHN HEFFERNAN. Crime, breaking and entering. Found guilty, and sentenced to the Massachusetts Reformatory.

CHARLES MORSE. Crime, felonious assault. Awaiting trial.

EDSON H. NORTON. Crime, forgery. Awaiting trial.

PATRICK SLAVIN. Crime, larceny from building. Found guilty, and sentenced to ten months in the House of Correction.

CHARLES MOORE. Crime, assault. Found guilty, and sentenced to three years in the House of Correction.

MICHAEL H. BYRNES. Crime, breaking and entering. Awaiting trial.

GEORGE E. WENTWORTH. Crime, larceny from building. Found guilty, and sentenced to nine months in the House of Correction.

HENRY HOOK. Crime, rape. Found guilty, and sentenced to ten years in State Prison.

JAMES PETERS. Crime, larceny from building. Found guilty, and sentenced to House of Correction.

ANDREW BINSMORE. Crime, felonious assault. Found guilty, and sentenced.

JAMES FLOOD. Crime, adultery with step-daughter. Found guilty, and awaiting sentence on account of exceptions.

EDWARD WILBER. Crime, assault and battery. Found guilty, and sentenced to the House of Correction.

WILLIAM ALLISON. Crime, breaking and entering, larceny; also assault with a pistol. Found guilty, and sentenced to seventeen years in State Prison. Allison is a dangerous criminal, and has not yet been fully identified; he is a Western man.

CHESTER F. AMBLER. Crime, larceny of team. Found guilty, and sentenced to four years in State Prison. Ambler has served previous sentences in the House of Correction for larceny.

WILLIAM TIMMONS, *alias* PETTIGREW, *alias* CARROLL. Crime, burglary. Found guilty, and sentenced to twenty-five years in

State Prison. Timmons was indicted under the habitual criminal act.

ZEPHRAIN J. LUCIER. Crime, assault with a dangerous weapon. Found guilty, and sentenced to eighteen months in the House of Correction.

WILLIAM F. A. MCANDREW, *alias* W. F. ADDISON, *alias* several other names. Crime, burglary. Found guilty, and sentenced to ten years in State Prison.

FRED O. H. BOWEN. Crime, breaking and entering. Bowen is now under indictment in Worcester County, but is serving in Bristol County for a like offence.

CHARLES D. SAGE. Crime, lewdness. Awaiting trial.

BELLE I. CLARK. Crime, lewdness. Awaiting trial.

HENNINAGILE HUARD, *alias* JOSEPH HUARD. Crime, lewdness. Found guilty, and sentenced to three years in State Prison.

JAMES REYNOLDS. Crime, assault with a dangerous weapon. Found guilty, and sentenced to the House of Correction.

DR. S. J. BIRCH. Crime, procuring an abortion. Awaiting trial.

T. J. CONNORS. Crime, maintaining a lottery. Found guilty in the superior court, and sentenced to pay a fine.

NAPOLEON T. BODO, *alias* PETER BODO. Crime, larceny of team. Found guilty, and sentenced to four years in State Prison. Bodo has served a previous sentence in the Massachusetts Reformatory for a like offence.

EUGENE F. ODIE. Crime, adultery. Found guilty, and sentenced to two years in the House of Correction.

F. T. QUIRK. Crime, maintaining a lottery. Found guilty, and sentenced to pay a fine.

CHARLES W. PECKHAM, *alias* CHARLES WILSON. Crime, larceny of team. Found guilty, and sentenced to five years in State Prison. Peckham has served previous sentences in the Houses of Correction of Massachusetts and Rhode Island for larceny.

FRANK H. FULLER. Crime, selling leased property. Found guilty, and sentenced to pay a fine.

FRED H. BOHANON. Crime, adultery. Found guilty, and sentenced to eighteen months in the House of Correction.

WILLIAM H. NEWTON. Crime, larceny. Found guilty, and sentenced to six months in the House of Correction.

W. L. WHEELER. Crime, selling lottery tickets. Found guilty, and sentenced to pay a fine.

WILLIAM TAYLOR. Crime, larceny of team. Found guilty, and sentenced to two years in the House of Correction.

CHARLES SWEENEY. Assault with intent to kill. Found guilty, sentence suspended.

EDWARD WARD. Crime, larceny. Found guilty, and sentenced to six months in the House of Correction.

JOHN D. RICHARDSON. Crime, breaking and entering. Awaiting trial.

THOMAS CONLON. Crime, breaking and entering. Awaiting trial.

FRED L. MARTIN. Crime, destroying railroad signals. Found guilty, and sentenced to the House of Correction.

GARRETT A. WALSH. Crime, destroying railroad signals. Found guilty, and sentenced to the House of Correction.

M. G. LYNCH. Crime, maintaining a lottery. Found guilty in the superior court, and sentenced to pay a fine.

WILLIAM CUMMINGS. Crime, adultery. Found guilty, and sentenced to two years in the House of Correction.

GEORGE A. TUCKER, *alias* G. A. EMERSON, *alias* several other names. Crime, burglary. Found guilty, and sentenced to fifteen years in State Prison. Tucker is a notorious thief, and has been a criminal all his life; has served a large number of sentences.

WILLIAM H. TUCKER. Crime, common and notorious thief. Found guilty, and sentenced to nine years in State Prison. William is a brother of George A. Tucker, and his record is bad.

PETER J. LYONS. Crime, selling lottery tickets. Found guilty in the superior court, and sentenced to pay a fine.

PLUMMER A. CHASE, *alias* R. H. CHASE, *alias* A. W. CHASE. Crime, forgery. Found guilty, and sentenced to ten months in the House of Correction.

JOHN H. WALKER, *alias* A. H. ROGERS. Crime, larceny from building. Found guilty, and sentenced to ten months in the House of Correction.

J. W. PHILPOT, Jr. Crime, selling lottery tickets. Found guilty in the superior court, and sentenced to pay a fine.

ISABELLA SPENCER. Crime, abandoning a child. Found guilty, and sentenced to one year in the Woman's Prison.

GEORGE JACKMAN. Crime, larceny. Found guilty, and sentenced to eighteen months in the House of Correction.

ALVAH W. WEBSTER. Crime, breaking and entering. Found guilty, and sentenced to the Massachusetts Reformatory.

BERTHA RODMAN. Crime, larceny from building. Awaiting trial. She is now serving out a sentence in the Woman's Prison at Sherborn for a like offence.

ALLEN F. LINCOLN. Crime, adultery. Awaiting trial.

PETER SILVIA. Crime, larceny. Found guilty, and sentenced to the House of Correction.

GEORGE B. SANDFORD. Crime, breaking and entering. Sandford was found to have in his possession a large amount of property stolen from Manchester, N. H., and he was turned over to Manchester, N. H., officers.

RICHARD JOHNSON. Crime, assault with a dangerous weapon, with intent to kill. Found guilty, awaiting sentence.

JAMES ROUNDS. Crime, obtaining goods under false pretence. Awaiting trial.

MATTHEW O'BRIEN. Crime, larceny from building. Awaiting trial.

GEORGE T. SMITH. Crime, burning a building. Found guilty, and sentenced to three years and six months in State Prison.

FRANK JACQUES, *alias* ADELARD CHARBONEAW. Crime, larceny of horse, buggy and harness. Found guilty, and sentenced to the House of Correction.

E. CLARENCE PAGE. Crime, attempt to poison another. Found guilty; motion made and granted by the judge for a new trial, which is now pending.

WILLIAM H. PROCTOR. Crime, breaking and entering. Found guilty, case continued until next term.

FRANK H. WARNER, *alias* F. H. NELSON. Crime, breaking and entering, and larceny of horse, four counts. Found guilty, and sentenced to twelve years in State Prison. Warner is a notorious horse thief, and has served at least three previous sentences.

GEORGE BROWN. Crime, larceny from building. Found guilty, and sentenced to three years in State Prison. Brown has served several sentences in the House of Correction.

MATILDA OLSON. Crime, larceny from building. Found guilty, and sentenced to the Woman's Prison at Sherborn.

JAMES HIRAM BERRY. Crime, breaking and entering, four counts; also larceny, three counts. Found guilty, and sentenced to seven years in State Prison.

FRANK A. MILLER. Crime, breaking and entering, also larceny. Found guilty, and sentenced to the Massachusetts Reformatory.

GEORGE H. WIGGIN. Crime, obtaining $3,000 by false pretence. Awaiting trial.

JAMES MURPHY. Crime, larceny from building. Found guilty, and sentenced to eight months in the House of Correction.

JAMES SMITH, *alias* MARK SENNOTT. Crime, breaking and entering, and larceny. Found guilty, and sentenced to three years in State Prison. Smith is a Lyman School boy, to which place he was sent for a like offence.

Albert Burr. Crime, breaking and entering. Found guilty, and sentenced to the Massachusetts Reformatory.

Michael Anderson. Crime, breaking and entering, two counts. Awaiting trial.

Joseph King. Crime, breaking and entering, and larceny of horse. Awaiting trial.

William Anderson. Crime, breaking and entering, two counts. Awaiting trial.

Elias J. Concklin. Crime, larceny of horse. This offence was committed in the State of Connecticut, where he was tried, found guilty, and sentenced to three years in State Prison.

William Taylor. Crime, larceny from building. Found guilty, and sentenced to the Massachusetts Reformatory.

Fred Fay. Crime, forgery. Found guilty, and sentenced to the Massachusetts Reformatory.

C. W. Manson. Crime, issuing shop bills in similitude of United States Treasury notes. Found guilty, and sentenced to pay a fine.

Richard H. Earle. Crime, violation of the insurance law. Found guilty, and sentenced to pay a fine.

John Smalley. Crime, attempt to rape. Awaiting trial.

Nathan F. Barlow. Crime, larceny from building. Found guilty, and sentenced to the Massachusetts Reformatory.

John P. Farrell. Crime, arson. Awaiting trial.

Asaph P. Child. Crime, violation of the insurance law. Found guilty, and sentenced to pay a fine.

Samuel Meadows. Crime, assault with intent to kill. Found guilty, and sentenced to one year in the House of Correction.

William McKenney. Crime, larceny of team. Awaiting trial.

Dennis H. Kelty. Crime, breaking and entering. Awaiting trial.

John Bowman. Crime, assault with intent to kill. Found guilty, and sentenced to one year in the House of Correction.

Cornelius Lynch. Crime, breaking and entering, Awaiting trial.

M. E. Walcott. Crime, maintaining lottery. Awaiting trial.

William H. Barny. Crime, breaking and entering. Awaiting trial.

Daniel W. Crowley. Crime, breaking and entering. Awaiting trial.

Amount of property recovered, $48,981.54.

CONSOLIDATED STATISTICAL REPORT.

Abandoning child, . . .	1
Abortion, ...	2
Adultery, ...	17
Arson, ...	3
Assault, simple, ...	5
Assault and battery, . .	23
Assault with intent to kill, .	2
Assault with a dangerous weapon, ...	4
Attempt to procure an abortion,	1
Attempt to rape, ...	1
Blackmail, ...	2
Burglary, ...	3
Breaking and entering, . .	47
Bestiality, ...	1
Capias, ...	2
Cruelty to animals, . . .	36
Cruelty to children, . .	1
Concealing leased property, .	1
Concealing mortgaged property, ...	2
Defrauding hotel keeper, .	9
Disturbing the peace, . .	50
Embezzlement, ...	3
Escaped lunatic, ...	1
Escaped prisoner, ...	4
Evading railroad fare, . .	2
Employment of children without certificate, ...	1
Forgery, ...	[illegible]
Felonious assault, ...	3
Giving false answers to stable keeper, ...	1
Incendiarism, ...	2
Illegal gaming, ...	2
Issuing shop bills for treasury notes, ...	1
Injuring railroad signals, .	2
Insanity, ...	4
Larceny, ...	73
Larceny from person, . .	1
Larceny from building, . .	14
Lewd and lascivious cohabitation, ...	3
Lewdness, ...	4
Larceny of team, . . .	13
Manslaughter, ...	2
Murder, ...	4
Maintaining a lottery, . .	8
Malicious mischief, . . .	10
Non-support of family, . .	6
Neglect to turn horse to the right, ...	3
Neglect to provide proper lights in hotel, ...	1
Obtaining money by false pretence, ...	13
Obtaining goods by false pretence, ...	3
Peddling without license, .	11
Polygamy, ...	1
Pretending to be an officer, .	1
Poisoning swine, ...	1
Receiving stolen goods, . .	4
Rape, ...	1
Robbery, ...	1
Selling mortgaged property, .	1
Selling leased property, . .	2
Selling adulterated food, .	1
Swindling, ...	1
Stubborn child, ...	1
Stealing a ride, ...	3
Sodomy, ...	2
Transfer of prisoners, . .	14
Violation of the fish law, .	23
Violation of the dentistry law,	1
Violation of the liquor law, .	36
Violation of ticket-of-leave, .	7
Violation of the ten-hour law,	3
Vagrancy, ...	8
Total, ...	525

THE DISPOSITION OF FORFEITED LIQUORS.

Chapter 100, section 38, provides as follows : —

SECT. 38. Any liquors so forfeited shall, by the authority of the written order of the trial justice or court, be delivered to the chief of the district police. Said officer shall sell the same and pay over the net proceeds to the treasurer of the Commonwealth.

The Legislature of 1887 passed an act providing for the seizure of implements and furniture used in the illegal selling of intoxicating liquors, which is as follows : —

[CHAPTER 406.]

AN ACT PROVIDING FOR THE SEIZURE OF IMPLEMENTS AND FURNITURE USED IN THE ILLEGAL SELLING OF INTOXICATING LIQUORS.

Be it enacted, etc., as follows :

SECTION 1. Section thirty of chapter one hundred of the Public Statutes is hereby amended by inserting after the word "contained" in the fifteenth line of said section the words : — and all implements of sale and furniture used in the sale of such liquor.

SECT. 2. Section thirty-three of chapter one hundred of the Public Statutes is hereby amended by inserting after the word "contained" in the third line of said section the words : — and all implements of sale and furniture used in the sale of such liquor.

SECT. 3. This act shall take effect upon its passage. [*Approved June 13, 1887.*

Under the law first above cited liquors forfeited to the Commonwealth, together with the casks or other vessels in which they are contained, have been turned over to my custody, and dealt with as legally required.

It may not be irrelevant for me to state in detail what is done with the liquors declared by the courts to be forfeited to the Commonwealth and delivered by the proper officers to this department. The cellar of the Commonwealth Building is used as a temporary storehouse. Its capacity is often severely tested. An inventory shows a more or less greater number of casks, barrels, demijohns, jugs and bottles, filled with condemned liquors. When hard liquors are received, they are all mixed together and poured into barrels or other large vessels. When a suitable quantity of this has accumulated, the United States collector of internal revenue is notified, and he sends an officer to gauge the liquors, and certify to the proof and the amount. After the distinctive character of the liquor has been destroyed in the manner indicated, the distiller causes it to be so handled that it becomes the alcohol of commerce. Wines are disposed of in the same way, and with equally satisfactory results. When any liquors are received which seem to be of a better than average grade, they are analyzed by a competent chemist, and, if found good enough, — which seldom happens, — they are sold to the hospitals, and for strictly medicinal uses. The lager beer and ale received is also subjected to the same treatment, and, in lots of forty or fifty barrels, sold to the manufacturers of vinegar.

Complete records are made and preserved of every transaction, from the time of the seizure of the liquors to their final disposition under the law, and it would seem to be impossible for any improper use to be made of them.

Under the amendment of the law, chapter 53, Acts of 1887, the expenses of transportation must be paid from the sales of the liquors and vessels received. In obedience to the above law I have received from the officers of the Commonwealth all liquors, and the vessels containing the same, which have been delivered to me as having been seized and forfeited by virtue of said act, giving my receipt for the same.

I annex a schedule showing the cities and towns from which the liquor has been received, and the quantity that has been turned over to me up to the present date : —

Forfeited Liquors from December 1, 1889, to December 1, 1890.

CITY OR TOWN.	Number of Seizures.	SPIRITUOUS.				MALT.			
		Gallons.	Quarts.	Pints.	Gills.	Gallons.	Quarts.	Pints.	Gills.
Andover, . . .	1	–	–	–	–	4	–	–	–
Ayer, . . .	1	–	–	–	–	4	–	–	–
Ashland, . . .	6	16	1	–	–	284	–	–	–
Amesbury, . .	10	44	2	–	1½	25	–	–	–
Avon, . . .	5	1	–	1	2	23	–	–	–
Auburn, . . .	6	2	2	–	–	38	–	–	–
Amherst, . . .	4	1	3	–	–	13	3	1	–
Athol, . . .	1	1	2	–	3	5	2	–	2
Boston, . . .	657	529	3	–	3	6,841	1	–	–

Forfeited Liquors, Etc. — Continued.

CITY OR TOWN.	Number of Seizures.	Spirituous.				Malt.			
		Gallons.	Quarts.	Pints.	Gills.	Gallons.	Quarts.	Pints.	Gills.
Brockton, . .	47	90	1	1	1	73	1	–	–
Blackstone, . .	6	31	1	–	–	180	3	–	–
Brookline, . .	12	2	3	1	–	80	–	1	–
Berlin, . . .	3	–	–	1	2½	–	–	–	–
Braintree, . .	2	–	2	1	2	12	–	–	–
Brookfield, . .	3	3	1	–	–	62	–	–	–
Burlington, . .	1	–	3	–	2	–	–	1	–
Bellingham, . .	2	7	1	1	2	70	2	1	–
Buckland, . .	1	–	1	1	–	22	3	–	–
Clinton, . . .	6	–	–	1	2	9	–	1	–
Cambridge, . .	39	34	1	1	1	438	1	1	–
Chelsea, . . .	11	3	–	1	1	38	1	–	–
Charlton, . . .	1	–	1	–	–	–	–	–	–
Canton, . . .	11	78	1	1	2	159	1	1	2
Concord, . . .	1	–	–	–	–	1	2	–	–
Dedham, . . .	3	2	2	1	2	10	–	–	–
Danvers, . . .	8	34	3	1	–	56	3	1	–
Douglas, . . .	5	9	1	1	3	58	–	–	–
Deerfield, . . .	1	1	1	–	–	7	–	–	–
Dracut, . . .	8	3	1	–	–	10	–	–	–
Easthampton, . .	4	2	3	–	–	60	1	–	–
Framingham, . .	10	11	1	1	1¼	3	1	–	–
Fall River, . .	110	94	3	–	3½	1,347	–	–	–
Fitchburg, . .	15	50	2	1	3	353	2	1	–
Franklin, . . .	6	6	2	1	2	1	–	2	–
Grafton, . . .	11	4	2	1	2	13	3	1	¼
Gardner, . . .	2	1	–	1	3	1	–	–	–
Gloucester, . .	20	9	3	1	1¾	35	–	1	
Great Barrington, .	1	2	–	1	2	8	–	–	–
Holliston, . .	1	3	2	–	–	62	–	–	–
Holbrook, . .	1	–	1	–	–	–	–	–	–
Haverhill, . .	27	30	2	–	–	172	2	–	–
Hardwick, . .	1	–	–	–	–	–	2	1	–
Holyoke, . .	24	114	2	1	2	814	–	–	2
Hyde Park, . .	4	–	3	–	2	30	–	–	–
Hudson, . . .	1	–	2	–	2	2	1	–	–
Hopkinton, . .	4	3	1	1	–	19	2	–	–
Ipswich, . . .	1	–	–	–	–	9	–	–	
Ludlow, . . .	1	–	1	1	–	–	–	–	–
Leicester, . . .	5	6	3	–	–	1	2		–
Lawrence, . .	51	41	–	–	2	465	2	1	2
Lowell, . . .	140	152	3	1	1	960	–	1	
Lynn, . . .	51	85	2	1	2	128	3	–	3
Marblehead, . .	12	19	1	1	2	8	1	1	1
Mendon, . . .	1	–	2	–	2	2	1	–	
Medford, . . .	5	–	1	1	2	45	2	–	1
Milford, . . .	7	183	3	–	–	388	2	–	
Marlborough, . .	3	2	1	1	2	55	2	1	2
Melrose, . . .	1	–	–	1	2	–	–	–	–
Middleborough, .	2	37	–	1	3	–	–	–	1

Forfeited Liquors, Etc. — Continued.

CITY OR TOWN.	Number of Seizures.	Spirituous.				Malt.			
		Gallons.	Quarts.	Pints.	Gills.	Gallons.	Quarts.	Pints.	Gills.
Methuen,	1	54	–	–	–	–	–	–	–
Medway,	3	2	3	–	–	5	–	–	–
Marshfield,	3	3	1	1	–	15	1	1	–
Malden,	16	16	2	1	1	123	2	–	–
Millbury,	12	2	1	1	–	–	–	1	2
Merrimac,	1	37	1	–	–	45	–	–	–
New Bedford,	13	82	3	–	2	37	2	1	2
Newburyport,	4	5	2	1	–	58	1	1	–
Newton,	14	47	2	–	1½	14	–	–	3
Nahant,	2	1	–	–	2½	10	3	1	–
Norwood,	1	2	–	–	–	–	–	–	–
Needham,	2	–	–	–	–	4	2	1	–
Nantucket,	2	17	–	–	–	35	–	–	–
Northbridge,	6	56	–	–	1	73	2	–	–
Natick,	16	22	3	1	2	45	3	1	3
North Brookfield,	5	8	1	1	3	15	–	1	–
North Attleborough,	2	–	1	1	–	24	–	–	–
Pittsfield,	13	7	1	–	1½	242	–	1	2
Plymouth,	3	–	–	–	–	47	–	–	–
Pepperell,	3	2	–	1	3	32	–	–	–
Rockland,	3	–	3	1	–	–	–	–	–
Rockport,	1	–	–	–	2	–	–	–	–
Revere,	67	12	2	1	1	322	2	–	3
Spencer,	8	–	–	–	–	–	–	–	–
Salem,	2	–	–	1	–	6	–	1	–
South Hadley,	1	–	–	–	–	34	–	–	–
Somerville,	29	29	2	–	1	192	2	1	2
Sandwich,	3	50	–	–	–	75	–	–	–
Springfield,	1	1	2	–	–	15	–	–	–
Salisbury,	3	2	–	–	3	–	2	–	2
Sutton,	11	8	2	–	1	1	2	1	–
Southborough,	2	–	–	–	–	80	–	–	–
Shirley,	2	3	2	–	–	–	–	–	–
Sherborn,	2	–	–	–	–	11	2	–	–
Stoughton,	7	15	1	–	1	48	–	1	–
Shrewsbury,	7	7	3	–	–	27	–	–	–
Stoneham,	8	14	3	–	2	2	1	–	2
Tyngsborough,	1	1	3	1	2	12	3	1	–
Templeton,	1	–	2	–	2	–	–	–	–
Tewksbury,	1	–	2	1	–	3	3	–	–
Taunton,	4	1	2	1	–	14	2	–	–
Upton,	1	–	–	–	–	50	–	–	–
Uxbridge,	1	3	–	–	–	1	–	–	–
Weymouth,	26	23	1	1	–	140	3	1	–
Woburn,	78	224	2	–	3	715	3	1	2
Worcester,	227	252	–	1	–	525	–	1	2
West Boylston,	8	7	–	–	3	19	–	–	–
Winchester,	4	–	2	1	–	–	–	–	–
Wayland,	1	–	1	1	–	–	–	–	–
Walpole,	1	–	–	–	–	125	–	–	–

Forfeited Liquors, Etc. — Concluded.

CITY OR TOWN.	Number of Seizures.	Spirituous.				Malt.			
		Gallons.	Quarts.	Pints.	Gills.	Gallons.	Quarts.	Pints.	Gills.
Westborough,	1	–	–	–	–	5	–	–	–
Whitman,	2	1	3	1	–	–	–	–	–
Wakefield,	5	5	1	–	–	–	1	–	–
Warren,	7	11	2	1	2	9	–	–	–
Ware,	1	–	3	1	2	–	–	–	–
Weston,	1	–	–	–	–	5	–	–	–
Watertown,	4	1	2	–	$1\frac{1}{2}$	13	3	–	–
Williamstown,	2	–	1	–	2	94	–	1	–
Winchendon,	1	4	2	–	–	–	–	–	–
Totals,	2,041	2,830	1	1	$2\frac{1}{2}$	16,900	–	–	$1\frac{1}{4}$

Total of Forfeited Liquors received under Chapter 100 of the Public Statutes.

YEAR.	Number of Seizures.	Malt Liquors.	Spirituous Liquors.	Total.
1876,	1.824	$30,872\frac{10}{32}$	$5,198\frac{5}{32}$	$36,070\frac{15}{32}$
1877,	1,579	$15,825\frac{25}{32}$	$4,564\frac{8}{32}$	$20,390\frac{1}{32}$
1878,	1,472	$16,650\frac{20}{32}$	2,614	$19,265\frac{20}{32}$
1879,	747	$8,431\frac{8}{32}$	$1,314\frac{29}{32}$	$9,746\frac{5}{32}$
1880,	751	$7,102\frac{21}{32}$	$2,213\frac{3}{32}$	$9,315\frac{28}{32}$
1881,	923	$10,326\frac{23}{32}$	$2,360\frac{8}{32}$	$12,686\frac{31}{32}$
1882,	1,142	$12,220\frac{18}{32}$	$3,301\frac{31}{32}$	$15,522\frac{12}{32}$
1883,	806	$6,487\frac{27}{32}$	$1,541\frac{22}{32}$	$8,029\frac{17}{32}$
1884,	1,096	$11,077\frac{27}{32}$	$1,928\frac{15}{32}$	$13,006\frac{10}{32}$
1885,	898	9,261	1,390	$10,652\frac{14}{32}$
1886,	1,602	$14,639\frac{31}{32}$	$2,408\frac{18}{32}$	$17,048\frac{17}{32}$
1887,	1,506	$16,109\frac{16}{32}$	$2,248\frac{17}{32}$	$18,358\frac{1}{32}$
1888,	1,817	$17,569\frac{11}{32}$	$3,077\frac{16}{32}$	$20,646\frac{27}{32}$
1889,	2,117	$23,189\frac{25}{32}$	$2,657\frac{10}{32}$	$25,847\frac{3}{32}$
1890,	2,041	$16,900\frac{1}{32}$	$2,830\frac{14}{33}$	$19,730\frac{15}{32}$

Liquors, and vessels containing the same, that have been seized and forfeited by virtue of said act, I have sold, and paid to the treasurer of the Commonwealth the sum of $2,200 received from such sales.

APPROPRIATION AND EXPENDITURES.

	Appropriation.	Expended.
Compensation of officers,	$50,000 00	$49,802 14
Travel,	18,600 00	17,703 88
Contingent,	4,100 00	3,926 21
	$72,700 00	$71,432 23
Amount expended less than appropriation,	. .	$1,267 77

ROSTER OF THE MASSACHUSETTS DISTRICT POLICE.

CHIEF OF DISTRICT POLICE, ... RUFUS R. WADE.

Inspectors of Factories and Public Buildings.

NAME.	District Assigned.	Residence.
John T. White,	Northern,	Arlington.
Warren S. Buxton,	Western,	Springfield.
Joseph M. Dyson,	Middle,	Worcester.
Samuel C. Hunt,	Eastern,	Salem.
J. H. L Coon,	Suffolk County,	Watertown.
H. A Dexter,	Southern,	Fall River.
E. Y. Brown,	Suffolk County,	East Boston.
J. A. Moore,	Suffolk County,	Roslindale.
J. H. Chadwick,	South Eastern,	Dedham.
A. J. Cheney,	Eastern,	Beverly.
Isaac S. Mullen,	Suffolk County,	Boston.
Joseph Halstrick,	Suffolk County,	Boston.
D. W. Hammond,	Eastern,	Haverhill.
John L. Knight,	Western,	Springfield.
F. W. Merriam,	Berkshire and Franklin counties,	North Adams.
J. B. Willard,	Middle,	Worcester.
E. D. Eldridge,	Northern,	Malden.
James R. Howes,	Berkshire and Franklin counties,	Holyoke.
Frank McGrau,	Southern,	Fall River.
H. T. Bardwell,	Suffolk County,	Boston.

ROSTER MASSACHUSETTS DISTRICT POLICE — Concluded.

Detective Department.

NAME.	District Assigned.	Residence.
Josiah A. Bean,	Northern,	Natick.
Jophanus H. Whitney,	Northern,	Medford.
Joseph E. Shaw,	Eastern,	Lynn.
Moulton Batchelder,	Eastern,	Lawrence.
George C. Pratt,	South Eastern,	North Abington.
George F. Seaver,	Southern,	Taunton.
David H. Hayter,	Middle,	Worcester.
F. E. Emery,	Middle,	Gardner.
Moses H. Pease,	Western,	Lee.
Benson Muryan,	North Western,	Northampton.
F. A. Rhoades,	Suffolk,	Malden.
W. H. Proctor,	Special Duty,	Swampscott.

Clerk of District Police — JAMES P. CAMPBELL.

Assistant Clerk — JAMES W. HOITT.

Storehouse of the Chief of the District Police — 65 BOWDOIN STREET BOSTON.

Clerk — BELLE C. DAVIS.

CONCLUSION.

As I have stated, this is the twelfth annual report which I have had the honor to submit to the Chief Executive of the Commonwealth. During this entire period it has been my steadfast purpose and aim to make the work of the District Police conform strictly to the laws, the enforcement of which has been entrusted to this department.

Without fear or favor, each officer has been required to discharge his official duty with discretion and fidelity. The discipline of the force has never been impaired, and it has always enjoyed the confidence of the authorities and the good people of Massachusetts. It has always been my pride that this high standard should never be impeached by even the suspicion of wrong-doing. I desire to renew the expression of my obligation to the law department of the State government for its advice, when sought by me.

Respectfully submitted,

RUFUS R. WADE,
Chief Massachusetts District Police.

APPENDIX.

WARMING AND VENTILATING SCHOOLS.

Among other systems introduced for warming, ventilating, and sanitaries for schools and other public buildings, the Fuller & Warren has been extensively used, and has given good results and satisfaction. It is manufactured by the Fuller & Warren Warming and Ventilating Company of No. 43 Milk Street, Boston, and Troy, N. Y.

The Fuller & Warren Company's system of warming and ventilation can be described briefly as an apparatus so arranged as to introduce fresh air through the building during the day, when fresh air is needed and required, and, by a simple mechanical device, close the stack and air supply from outside at night, thereby maintaining an even temperature throughout the building, without the chilling effect obtained by the introduction of cold air when the fires are low.

The air is introduced through metal ducts, above grade, to insure its purity, and is passed to the furnace room, in which are placed furnaces of unusual capacity; the principle of their system being based upon the fact that *warmed* and not *over-heated or burned* air should be supplied, and therefore apparatus of sufficient capacity to attain this result is furnished. These furnaces are of such construction as to admit the maintaining of a continuous fire as easily and economically as with stoves. (See Plate A.) Passing from the furnace chamber, the fresh air is conducted to the several rooms and is introduced therein at such a point that it will thoroughly circulate and diffuse itself throughout the room. (See Plate B, illustrating air currents.) This is accomplished in such a thorough manner that the temperature will vary but little at any two desks in the room. The air having been diffused throughout the rooms without any perceptible draughts, it is taken through the exhaust register and passed from the building; this is the action during school hours. At night the air is passed from the rooms to the furnace and from thence to the rooms again, thereby keeping them warm by circulation, and the furnace

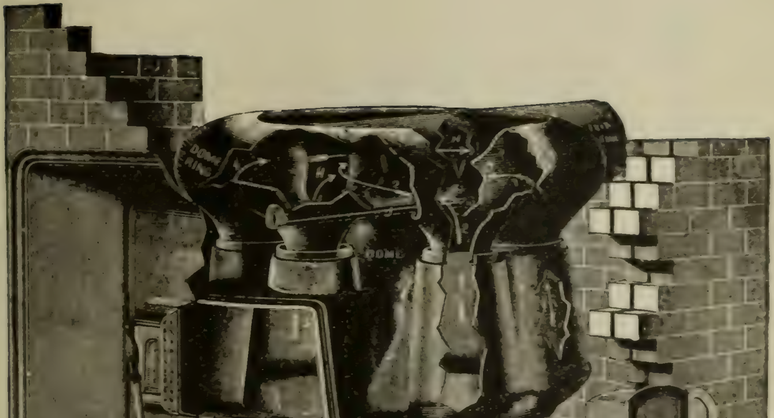

PLATE A.

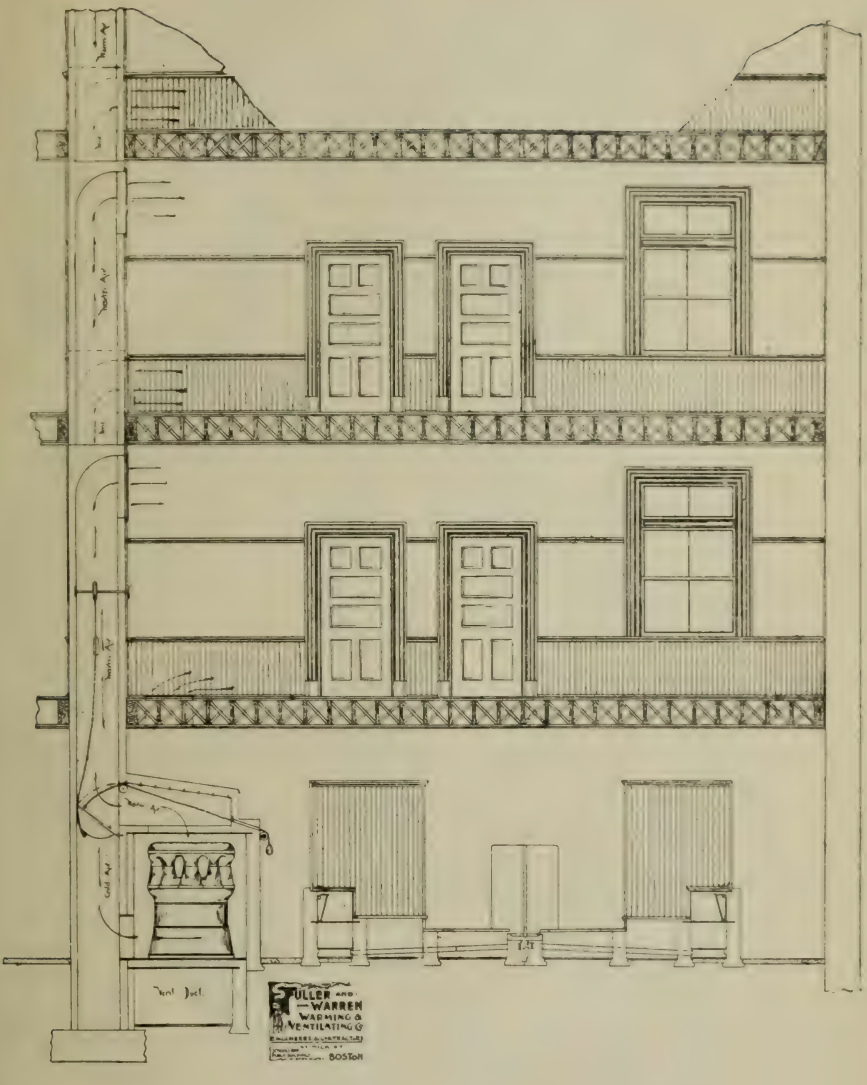
Warm Air
Vent
Warm Air
Vent
Warm Air
Warm Air
Cold Air
Vent Duct
FULLER AND WARREN WARMING & VENTILATING Co
ENGINEERS & CONTRACTORS
BOSTON

PLATE B.

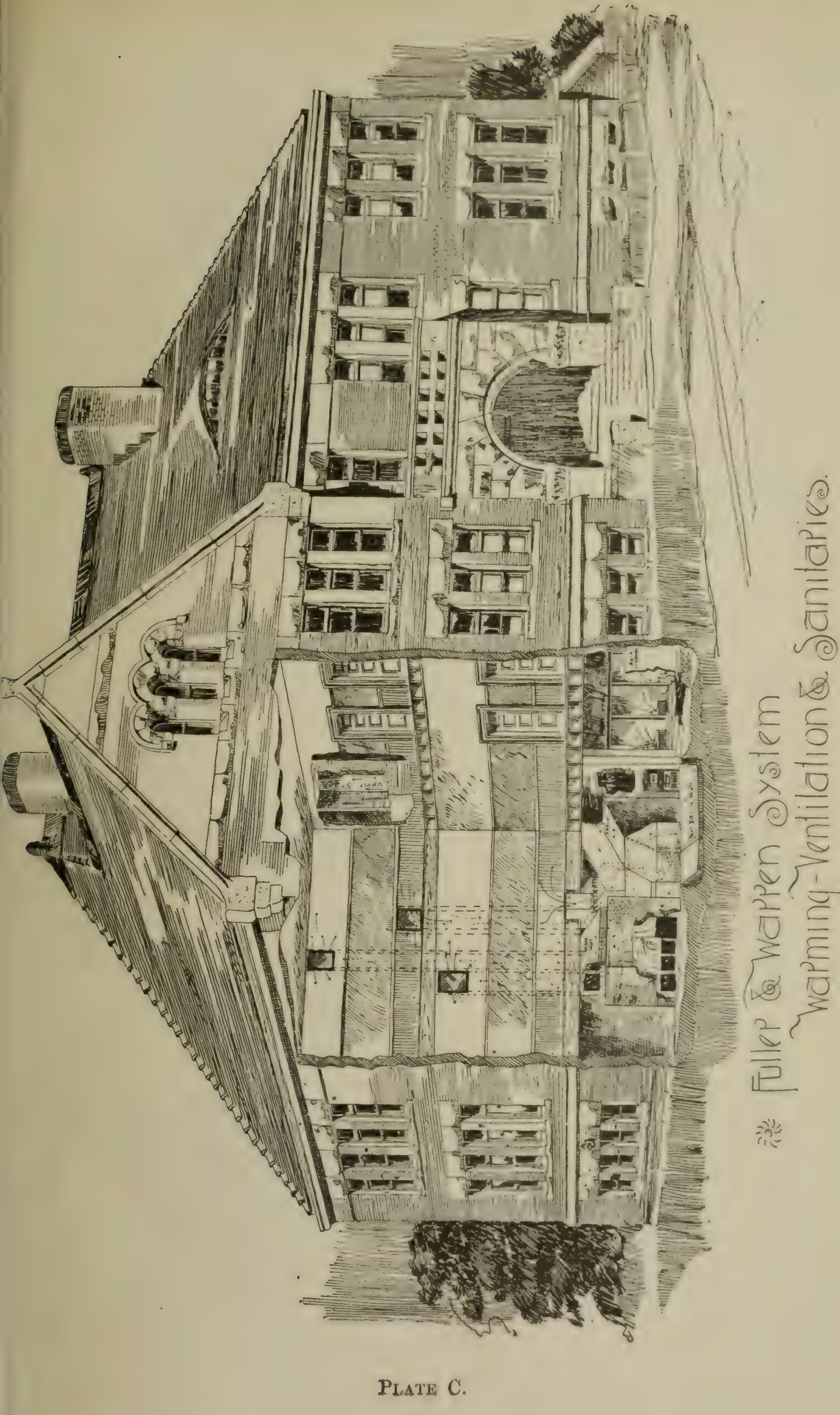

PLATE C.

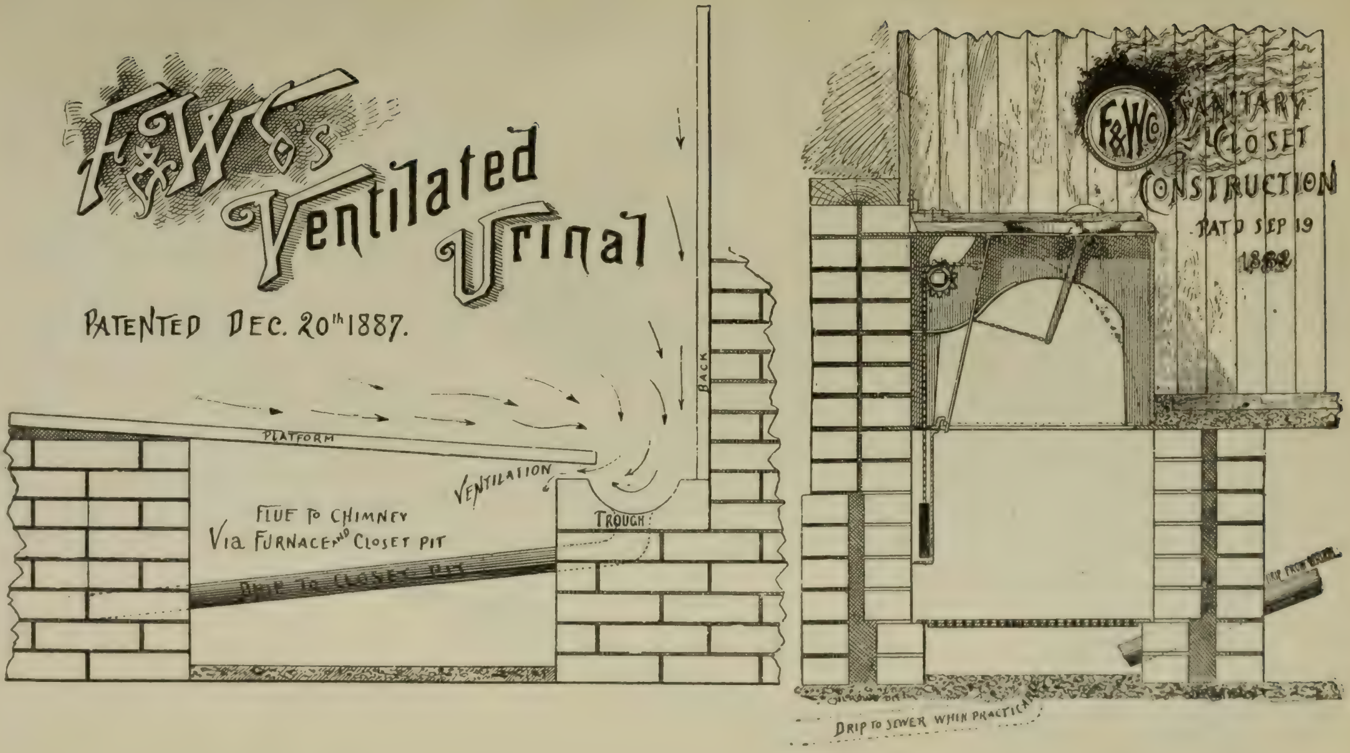
F&W Co's
Ventilated Urinal
PATENTED DEC. 20th 1887.
PLATFORM
VENTILATION
TROUGH
BACK
FLUE TO CHIMNEY
VIA FURNACE AND CLOSET PIT
DRIP TO CLOSET PIT
F&W Co
SANITARY CLOSET
CONSTRUCTION
PAT'D SEP 19
1882
DRIP FROM
DRIP TO SEWER WHEN PRACTICABLE

PLATE D.

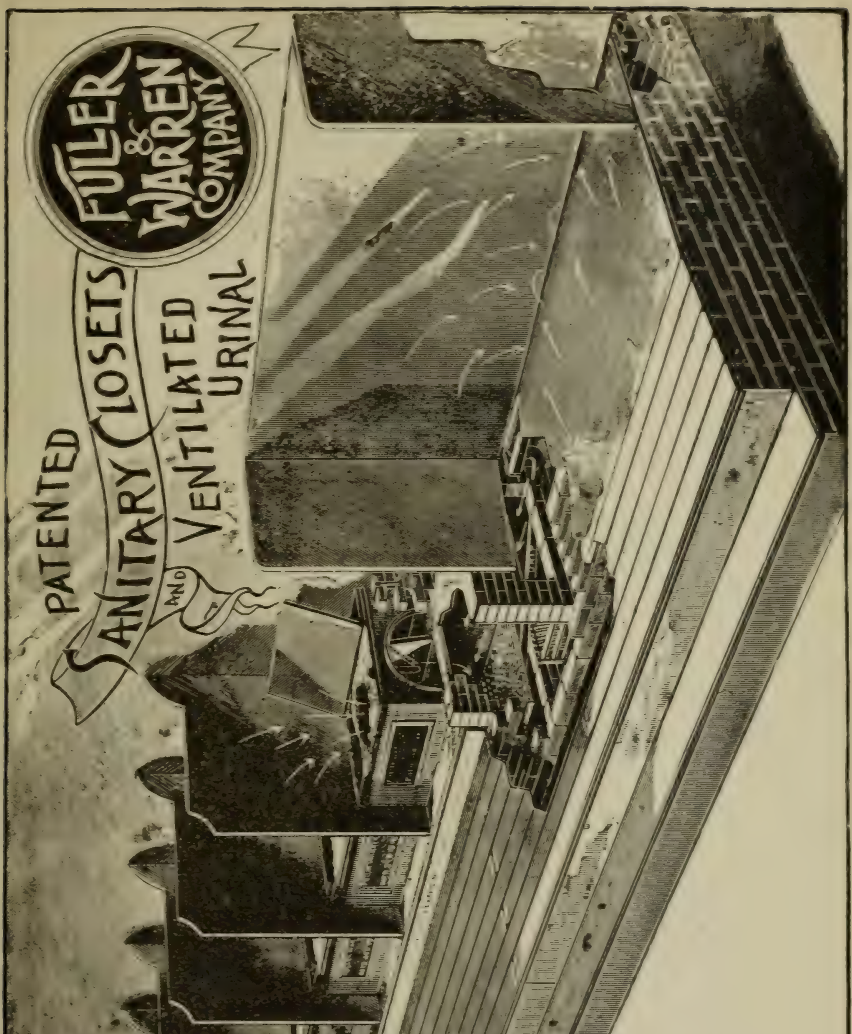
FULLER & WARREN COMPANY
PATENTED SANITARY CLOSETS AND VENTILATED URINAL

PLATE E.

acting practically the same as a stove which is placed in the room itself.

No registers are used in school-rooms in this construction, the supply of air therefore being constant, and can at no time be shut off by the closing of register if the room becomes over-heated. Each room, however, is supplied with mixing valves, which enables the teacher in charge to regulate the temperature of the air entering the room at will; and when the regulator is operated, the same is indicated by an attachment in the janitor's room in basement, so that he, without leaving his proper place, has indicated to him the requirements of the several school-rooms as to warm or cool air. [illegible] general adaptation of this system is illustrated in Plate C. [illegible]

The course of air [illegible] an perhaps best be illustrated by quoting from the appen[illegible] the annual report of the Board of Education for the city [illegible]dgeport, Conn., for the year ending July 11, 1881. This artic[illegible] from the pen of Warren R. Briggs, architect, a gentleman who has achieved an enviable reputation as having greatly assisted in the development of economical and sanitary warming and ventilation for school buildings. We quote: "Again, it has been said that it was impossible to heat exposed rooms by the indirect plan without an enormous apparatus. This is a mistake, for neither is an extravagant use of fuel nor a gigantic apparatus required, if the apparatus is properly arranged and understandingly handled. The trouble has been not from inability to produce heat, but from the extraordinary loss of heat; this being occasioned in many cases by the position of the introductory flues, and in other cases by that of the outgoing ventilating ducts."

The circumstances attending the tests, the illustrations of which are herein presented, entitle them to more than usual consideration. These experiments were made by a party of gentlemen who were honestly endeavoring to learn the method of introduction and exhaustion which would most thoroughly utilize the warmth and freshness of the current of air passing through a room. They were not interested in any heating or ventilating scheme or apparatus. No one of them had any special theory or hobby. Unlike most printed diagrams, which have been presented to the public, those are not what were *supposed to be* the courses of air currents to carry out somebody's theory, but the pictures of *what was actually visible* to the party as they were looking through a glass room. It must be borne in mind that the air in this glass room was protected from all disturbing currents, and, unlike an occupied room, the currents inside were not affected by the motion or breathing of the occupants. In other words, it was in the condition of an empty school-room.

The six illustrations following are taken from the same work, and show what Mr. Briggs and the gentlemen of the board found to be the actual courses of currents through the glass room.

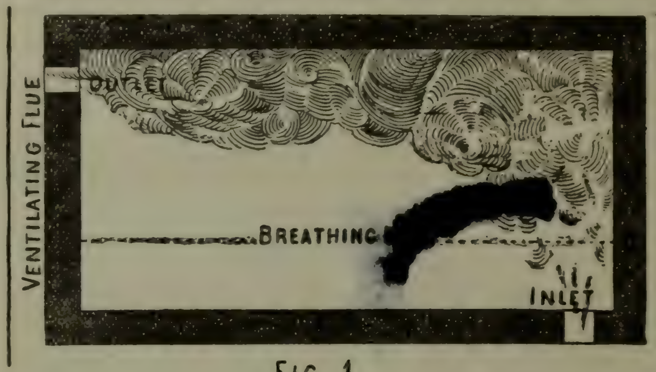

FIG 1

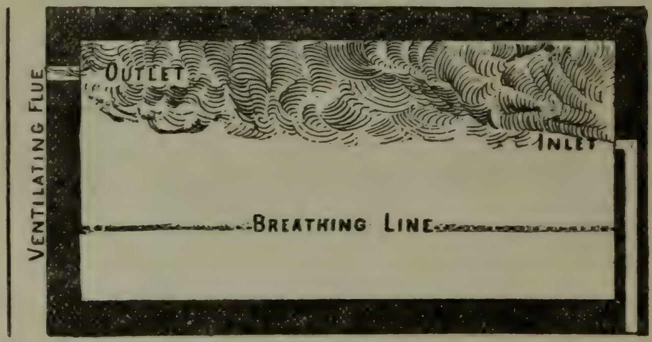

FIG 2

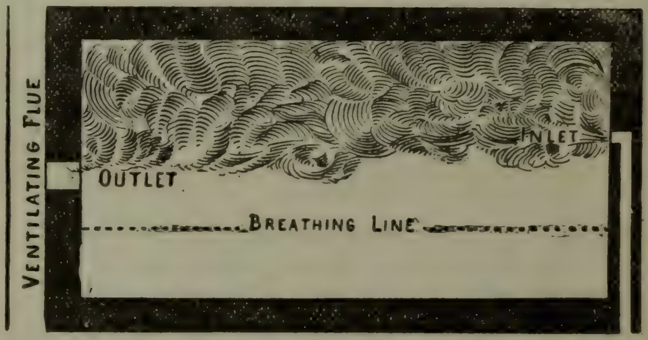

FIG 3

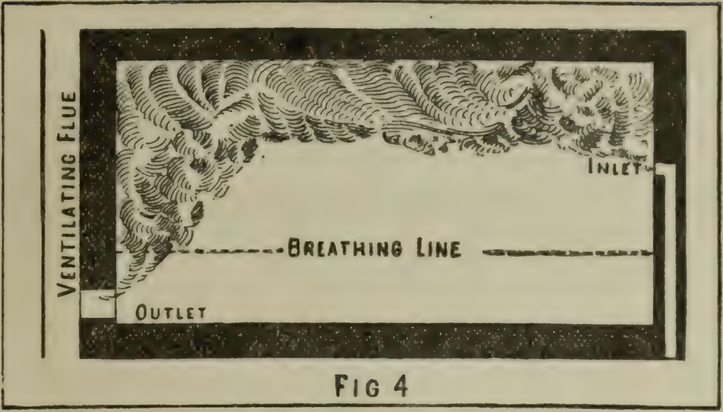

FIG 4

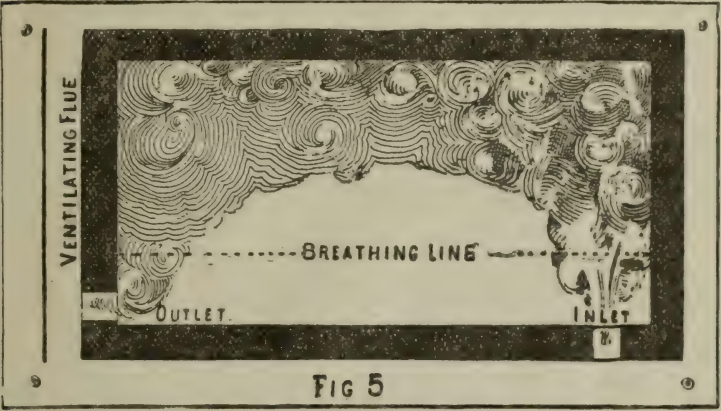

FIG 5

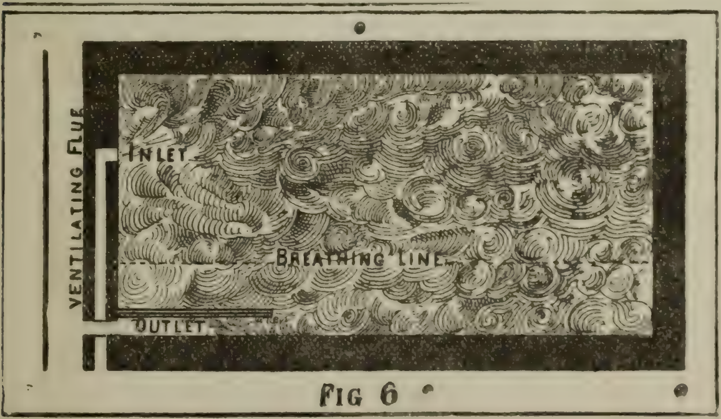

FIG 6

It is not to be understood that passable results may not be attained by other arrangements of flues, but that the one illustrated by Fig. 6 is the natural and most effective.

The Fuller & Warren Company are also the proprietors of a system of sanitary appliances, constructed on what is known as the "dry-closet" method, and illustrated in Plates D and E. This system may be seen in operation in several of the Boston schools and many throughout the State. These closets are entirely fire-proof. They are compact, taking up about the same space as water-closets. For closets built in basements, the foundation is a bed of cement, and the walls of the pit for retaining the deposit are of brick laid in cement. The construction is such that in no case can the urine (or any of the contents of the closet) come in contact with any wood surface. All the surfaces exposed are such that no material can be saturated with the moisture; therefore, there is at no time any perceptible odor, *and, when burned out, the pit is as clean as when new.* The excrement is deposited on a perforated false bottom, or screen, which allows all moisture to fall to the bottom of the pit. This not only separates the solid from the liquid, but has the additional advantage of presenting three surfaces to the desiccating current of air passing through the closet. In the direct line of the current of air entering the pit is placed a heater, for raising the temperature of the air current, when the atmosphere is charged with moisture, as on rainy days. In the boys' closets in school-houses, or wherever closets are to be used by males only, there is provided Short's patent ventilated urinal, in which, to prevent odors from rising, a constant current of air (which is afterwards used for desiccating the contents of the closet) is passed downward over the metal or stone surface of which the stalls are constructed. All matter is dried and burned without removing same from place originally deposited. All is utterly destroyed by fire, and possibility of infection or contagion is thoroughly and completely obviated.

AMESBURY, MASS., Nov. 27, 1890.

DEAR SIR: — Your first letter got misplaced, but I hope this delay may cause you no inconvenience. Our ventilation in the high school building is very satisfactory to us. There is less lassitude, less absence from sickness, less complaint from headache, and more energy and ambition manifested. I think we all appreciate the great improvement.

Yours truly,

H. E. TUTTLE,
Principal Amesbury High School.

FALL RIVER, MASS., Dec. 1, 1890.

MY DEAR MR. WADE: — I am glad to see the subject of ventilation of school buildings discussed and brought to the attention of the general public. It is true that during the last twenty-five years great improvements have been made in the arrangements, internal and external, of school-houses, for promoting the comfort and convenience of both teachers and pupils; yet it is to be regretted that in the matter of ventilation but little advance has been made. Why this is so it is difficult to state, unless it is owing in part to the fact that architects have been comparatively ignorant of the value of pure air to those engaged in mental work. Another thing that has contributed to this condition of affairs is this: few architects have had well-defined notions on this subject, and but few had knowledge of any method based on scientific principles adequate to supply a sufficient amount of pure air to a crowded school-room without draughts. With the advanced thought on this subject, a great change has taken place, and it is not infrequent to see reports now in which the statement is made that certain buildings are supplied with a perfect system of ventilation. It is a well-known fact that very much more and better mental work can be performed in a well-ventilated school-room than can be performed in one poorly ventilated, and that the extra work can be performed with less fatigue. I hope the time is not far distant when not only every school-house, but every public and private building, shall be supplied with a current of fresh, pure air.

Yours truly,

WILLIAM CONNELL,
Superintendent of Public Schools.

CONCORD, MASS., Dec. 2, 1890.

RUFUS R. WADE, Esq., *Chief of the District Police.*

DEAR SIR: — Your letter of the 28th ult., in regard to the present system of ventilation at our high school building, is at hand. We consider the system a success. The teachers report that they find themselves notably in better condition at the end of the day than they used to be in our old building, and the tests show a plentiful supply of fresh air. It is a vast improvement over anything we have had before.

Truly yours,

WOODWARD HUDSON,
Chairman School Committee.

AYER, MASS, Dec. 4, 1890.

RUFUS R. WADE, *Chief District Police.*

DEAR SIR: — Yours in regard to our system of ventilation is received. I am pleased to say that it works very well, and that the results have been good. Of course it has not been on trial long enough as yet to allow us to judge fully as to its merits; but we believe that it will prove to be entirely satisfactory.

I am yours very truly,

BENJ. H. HARTWELL,
Chairman School Committee.

CHELSEA, Dec. 4, 1890.

RUFUS R. WADE, Esq., *Chief Massachusetts District Police.*

DEAR SIR: — The new hospital in our city was ventilated in accordance with the suggestions of your inspector, and has proved satisfactory to the physicians in charge, who are particular to have thorough ventilation.

Yours, etc.,

RUFUS S. FROST.

UNION SQUARE, Dec. 5, 1890.

RUFUS R. WADE, Esq., *Chief of Massachusetts District Police.*

DEAR SIR: — Your letter of the 3d inst. came duly to hand, in which you request me to say a word in regard to the ventilation and heating of our school buildings.

I have been for many years an advocate of improved methods of heating and ventilating, and am in hearty sympathy with the measures taken by your department looking to reforms in schoolhouse construction and appliances. In my last annual report to the school committee I explained the condition of our buildings, and reported upon a visit of inspection in other cities, and recommended improvements.

I appreciate the value of the work done for us by your inspector, Mr. J. T. White. He has been very thorough in his inspections, and careful in his presentation to our committee of the conditions existing and the reforms necessary. I realize the fact that without his aid we could not have gained the attention to needed changes that has been given by the city government. The interest awakened here has reached not only the school board and the city council, but the press and the people are also alive to the importance of the work now being done.

A year ago it was decided to erect a new eight-room building on Concord Square, and to enlarge the Morse School by the addition of six rooms. This gave the opportunity of putting into these two buildings the Fuller & Warren system of heating, ventilating and sanitaries. The Lincoln School was also supplied with the dry closets of the same company. Repeated tests have proved the value of this system. The experience of the coming winter will enable us to judge of its merits in regard to heating.

While this was being done, the city government, in response to your suggestion, contracted with A. A. Sanborn & Co. to put a system of ventilating into the Prescott School,—a twelve-room building, built many years ago. During the last summer the same changes were made in the Forster School, which is similar to the Prescott. Tests recently made show very satisfactory results.

During this year the Highland School building has been enlarged to twelve rooms, and the Smead system put in. We have just had satisfactory tests made there also. Two other buildings are now in process of erection, the contracts for heating and ventilating having been awarded to the Smead Company in one case, and to O. S. Kendall in the other.

You will see by this that the sentiment in our city is strongly in favor of the best and most approved system; that plans are in operation that will enable me to report authoritatively before many years go by; and that the work of your department is appreciated and is bearing fruit.

If this is an indication of the work you are doing in the State, I should judge that its scope and importance is immeasurable.

Very respectfully,

C. E. Meleney,
Superintendent Public Schools.

HINGHAM, MASS., Dec. 6, 1890.

DEAR SIR: — During the past summer the high school building at Hingham has been furnished with new ventilators, according to suggestions and sketches made by an inspector connected with your office. The cost of the work was moderate, and its value to the school cannot fail to be great. Formerly we had but little means of ventilation other than the windows; it is unsafe to ventilate by windows, and consequently the air of the rooms was generally more or less unfit to breathe. But now I find the air of the rooms nearly as fresh as that outside, while no one is exposed to an injurious draught. The system is, in my judgment, an excellent one; and it is much to be desired that all public buildings might be furnished with equally effective means of admitting pure air.

Yours respectfully,

L. P. NASH,

Superintendent of Schools.

CHELSEA, MASS., Dec. 9, 1890.

Mr. RUFUS R. WADE, *Chief of the District Police.*

DEAR SIR: — The city of Chelsea, under my superintendence, and by orders issued from your office, has made great and important changes in her school buildings, as regards ventilation, in the last three years. We have now twelve buildings in which school is held; five of the largest have been thoroughly remodeled, and the most improved and modern system for warming and ventilating has been introduced, and all the others have been greatly improved, to comply as nearly as possible with orders issued from your office. Some of the small school buildings are not up to the standard, but are not very bad, and will, I think, be further improved and finally completely ventilated in the near future. We have three different systems in the five buildings, and they are all doing good work. I consider ventilation in school buildings of great importance, and our citizens are becoming more interested every year in the subject. The city governments for three years past have shown a disposition to do all in their power to help along this matter. The committees that have had charge of the school buildings, as well as the school committee, have been unanimous in their support for good ventilation, and everything has moved along harmoniously on these lines, and there has been no clashing between the State inspectors and city authorities but all agree that good ventilation is of great importance to our school children, and hope that we shall be as unanimous in the future as in the past.

Very respectfully yours,

D. L. Lord,
Superintendent of Public Buildings.

Revere, Mass., Dec. 15, 1890.

Rufus R. Wade, Esq., *Chief Massachusetts District Police.*

Dear Sir: — Replying to your favor of the 12th instant, I would say, we have most excellent results from our improved method of ventilation in our school buildings: noticeable, first, in the absence of disagreeable odor which is usually observed when entering a school-room from out-doors; second, in the fact that direct draughts are obviated; third, the headaches and colds, prevalent formerly, are now almost obsolete; fourth, far better results in school work as a whole, consequent, we believe, upon good, pure air. We would not willingly return to the old conditions.

Yours very truly,

Frank H. Dow,
Chairman.

Walpole, Mass., Dec. 16, 1890.

Dear Sir: — Your favor of the 12th received, and noted. In reply, I would say that, as far as the law (chapter 149, Acts of 1888) is concerned, it meets my hearty approval. I think it should be rigidly enforced in every detail. I think that nine-tenths of the complaints made against the breaking down of pupils in our schools from "overwork," "nervous exhaustion," etc., is due to poor ventilation, and lack of proper physical exercises both in and out of school. Our schools are putting too much stress upon *intellectual* development, to the exclusion of physical and moral. The enforcement of this law is a long step in the right direction.

Regarding the change made in the Centre School, it has hardly been working long enough to warrant a judgment, and needs perfecting in certain minor details to secure the best results. We have had considerable trouble in maintaining the temperature on extremely cold days; but, as this is a matter that can be easily remedied by increasing the amount of heating surface in the cold-air chambers, I see no reason why we shall not have a system that is nearly perfection. I understand from the committee in charge that the company who have the contract propose to make such changes as are necessary to perfect the system.

Yours most truly,

FRANK W. SWEET,
Superintendent of Schools.

SALISBURY, MASS., Dec. 16, 1890.

Mr. RUFUS R. WADE, *Chief of Massachusetts District Police.*

DEAR SIR: — Thinking that you may be interested, I write to tell you of the working of the system of ventilation introduced into two of our school-houses in Salisbury, under the direction of Mr. A. J. Cheney, one of the State inspectors. The buildings ventilated were two single-room, country school-houses, such as you will find in the rural districts all over the State, and were warmed by a box stove, burning wood, in each, and were ventilated by way of doors and windows. Mr. Cheney, on inspection, found the air very bad, and the temperature very uneven; and therefore ordered the school board to properly warm and ventilate the buildings, and *recommended* a jacketed stove for each, which recommendation we accepted and adopted. And now for results: First, we have an even temperature throughout the room. Second, whereas, heretofore the teacher was obliged on cold days to allow the children to take turns in getting warm at the stove, now it is as warm in the corners as anywhere, and warm enough in all parts of the room. Third, the ventilation is complete, without opening any of the windows or doors, so that we save all draughts of cold air. Fourth, now, if we are told that the children take cold at school, we answer, "Not *in* the school building." Of course it costs some more to run these stoves than wood stoves, and the teacher has to exercise some care in keeping the fires just right, as we employ no janitor, except to start the fire in the morning; but the results seem to pay for the extra expense and care. We could have gone along in the old way, and should doubtless have done so; but the law declared against us, and we obeyed, and are happy to report that the changes are giving as much satisfaction to us as to the State inspector.

Yours truly,

JACOB F. SPALDING,
Secretary of School Board.

HOPKINTON, Dec. 17, 1890.

RUFUS R. WADE, Esq., *Chief District Police.*

DEAR SIR: — Your note of the 8th, asking my opinion of the results of the system of ventilation as applied to some of our school-rooms, is before me. I have delayed answering, in order to make further tests. I am satisfied that, where properly managed and cared for, the results are sufficient to warrant the outlay, and in the main quite satisfactory. There is no question but that the air is much purer than ever before in the rooms lately ventilated. The increased cost of fuel is the only drawback, but I have no means of knowing the exact amount of added cost.

Very respectfully,

A. H. FITCH,
Chairman Sub-committee.

FRANKLIN, MASS., Dec. 17, 1890.

MR. RUFUS R. WADE.

DEAR SIR: — I have delayed answering your communication of the 8th, that I might have more opportunity to observe the working of the heating and ventilating system that we have had put in. Up to within a few days, the system, with regard to heating, has been quite unsatisfactory, and mainly for the reason, I think, that it has not been fully completed, as was intended. I was away from town at the time it was put in, and for a considerable time after schools were kept in the building. For nearly a month after school commenced, say from middle of September to middle of October, there were no valves to cut off the hot air; the consequence was, the heat in the rooms could not be regulated, and at times they were too hot. For some time after this was remedied, there was no way to regulate the ingress of cold air, except what was resorted to temporarily. It has been only a few days since the work has been fully completed, as designed. We found that, as arranged, very little heat went into the ante-rooms. Some time after the hot-air valves were put in, so that the temperature of the rooms could be regulated, I learn that Mr. Moore inspected the rooms as to ventilation, and pronounced the result very satisfactory.

Here I wish to call attention to this fact, that Mr. Drennan said that the heat in the chimney or foul-air flue would always be sufficient to make the requisite draft to keep the air in the room pure; but, as I learn by hearsay, Mr. Moore said that there would have to be a fire in the stove in the chimney whenever the temperature was above 25°, which is nearly all the time during school-hours. If this is so, we consider it a great defect in the system, as it is more work to build that fire than it is to build that in the furnace. Our understanding of it was, that we were not required to have any fire in the stove except when there was not any fire in the furnace. I understand that at the time the examination was made there was a fire in the stove. Finding that we were required to keep up this fire, as I have stated, and that the heat in the ante-room was not sufficient, I proposed to Mr. Drennan to put in a coil of pipe over the fire in the furnace, and connect with it a radiator for each cloak room, and one in the chimney to furnish heat in lieu of the stove, except when there was not any fire in the furnace. We did this in one school-house during Thanksgiving week, and find that it works finely, keeping the ante-room at the same temperature as the school-rooms. Now, during such weather as we have had since Monday, it works to a charm. We had some trouble in heating the rooms for a *short* time after school commenced in the morning during those very cold days that we had last week, — but it must be remembered that everything was not completed. If it proves sufficient to heat the rooms by school time in the morning during zero weather, I must think it answers the purpose well, as far as *heating* is concerned, and I can see no reason why it will not. I have been in the rooms for several hours at one time, and, as far as I could judge by my feeling, the air seemed to be good; but I am aware that this is not a sure test. I should be glad if Mr. Moore could come out and give both houses a full test as to the ventilation, as they are now fully completed.

Yours very truly,

GEO. KING.

LOWELL, MASS., Dec. 19, 1890.

RUFUS R. WADE, Esq., *Chief of District Police.*

DEAR SIR: — Last spring an addition of four rooms was made to this school building, and the Smead system was introduced for warming and ventilating. These rooms have now been used about four months, and the ventilation has proved admirable. The air is at all times fresh and pure, and the teachers say that they feel less tired at the close of the day, and have fewer headaches, than when they were in their former rooms, where a system of direct radiation was used.

Yours respectfully,

CHAS. W. MOREY,
Principal Highland School

Cochituate, Mass., Dec. 19, 1890.

Mr. Rufus R. Wade.

Dear Sir: — After having fully tested the system of heating and ventilating in use in our building, we feel well satisfied with it. It is capable of heating the rooms in severe weather, and furnishing good ventilation at the same time.

Yours truly,

H. G. Kingman,
Principal.

Amesbury, Dec. 19, 1890.

Chief Inspector Wade.

Dear Sir: — Having noticed some unfavorable comments on school-house ventilation in a local paper, we wish to give testimony to good results which have been apparent during the cold weather. The system which was put into the high school building, under the direction of Inspector A. J. Cheney, has worked very satisfactorily. The average attendance has been much larger, and the general health and activity of the pupils improved.

F. Savage,
D. W. Davis,
G. E. Batchelder,
School Committee.

Brookline, Dec. 23, 1890.

Rufus R. Wade, Esq., *Chief of District Police.*

My Dear Sir: — I am glad to say that the appliances for heating and ventilating the Heath Street School, furnished by Messrs. Kenrick Brothers, are working very satisfactorily. I was able to witness only a few of the tests made by the State inspector, Mr. Coon, but was convinced that the attempt to supply a generous quantity of fresh air, and at the same time to preserve sufficiently high temperature, have been unusually successful. Several visits made to the school during the recent cold weather have only confirmed this favorable impression.

Very truly yours,

S. T. Dutton,
Superintendent of Schools.

BROCKTON, MASS., Dec. 23, 1890.

RUFUS R. WADE, Esq., *Chief of Massachusetts District Police.*

DEAR SIR: — Until about five years ago nothing had been done in this city to furnish anything like a system of adequate ventilation for the school-houses. It is true that there were flues connected with the chimneys in some of the buildings for this purpose, and flues not connected with them and opening into the attic in others, and in some a single trap door opening from the ceiling into the unfinished loft; but none of these means furnished pure air for the children, and resort was had to the windows.

In 1885 two buildings were erected, and furnished with the Ruttan-Smead system of heating and ventilating. These buildings have been satisfactorily heated and ventilated, and from that time there has been an increasing sentiment in favor of ventilating the school buildings; and I think that, should another be constructed on the old plan, it would receive the condemnation of all interested parties.

Last year a new building was erected, and three enlarged, and all supplied with the Smead system of heating and ventilating, and also with their dry closets; so that at the present time we have six buildings with a system of ventilation, and a visit to these during the time when the schools are in session, and also to one not so ventilated, will give all the proof necessary of the advantages of ventilation.

It is very important that pure air should be admitted to our school-rooms, which is not cold, and without blowing upon the pupils; and it is equally important that the impure air should be removed. I am convinced that much of the headache and many of the colds of teachers and children are due to the lack of ventilation, or to cold air blowing upon them, by an effort to secure pure air by opening windows and doors.

In the matter of ventilation, we have received substantial aid from the State inspectors of public buildings, who have so faithfully looked after the construction of the buildings, both in relation to protection from fires, and ventilation; and I believe that their labors have been a necessity, and have resulted in an education to the community.

Yours truly,

B. B. RUSSELL,
Superintendent of Schools.

QUINCY, MASS., Dec. 23, 1890.

RUFUS R. WADE, Esq., *Chief of the District Police.*

DEAR SIR: — I am in receipt of a letter asking for some expression of opinion in regard to the workings of chapter 149 of the Acts of 1888, "An act to cause proper sanitary provisions and proper ventilation in public buildings and school-houses." So far as I know the opinions of the Milton school board, its members do not approve the act in the form which it now possesses. They object to the provisions of section 3, which confers unlimited power on a single inspector, and admits of no appeal from his decisions. At the same time, they undoubtedly believe that the act in question has set in motion certain measures which have greatly improved the sanitary condition of the Milton schools. The town has shown a most liberal spirit in complying with the suggestions of your department, and it is an indisputable fact that its several school-rooms were never before so properly warmed and ventilated as they now are.

Truly yours,

G. I. ALDRICH,
Superintendent of Schools.

RANDOLPH, Dec. 27, 1890.

RUFUS R. WADE, Esq.

DEAR SIR: — In reply to letter asking my views concerning the changes which have been made in our school building, I am pleased to say that I can speak most favorably. Our main room, in which there have been at times ninety pupils, was heated or (as to results) partially heated by one large stove. During cold weather, when a good fire was needed, the temperature has been found to be over ninety degrees close by the seat of one pupil, and less than sixty degrees near the seat of another pupil. We could ventilate only by raising at recess the windows, of which the room had four, and through a space between the sashes, a board being placed under the lower sash of the window. As a result, we had disagreeable and hurtful draughts through the room, and did not obtain reasonably pure air. An examination of the air showed the presence of almost twenty-five parts carbon dioxide. In brief, it was impossible to have an even or sufficient heat, and the air was generally very impure.

During the present year, in accordance with an order from your department, the building has been equipped with two furnaces and metallic foul-air ducts, which connect with a chimney over fifty feet in height and three feet square, inside measurement. During recent cold weather, with the mercury at about zero out of doors, we had abundant heat without forcing the furnaces; thermometers placed in the four corners of the room showed a variation in temperature of less than two degrees; the test for carbon dioxide showed the presence of about ten parts. With the draught at present from the ventilating chimney, the efficiency of which can be increased, the supply of air is about twenty-five cubic feet per minute for each person in the school. As a number of pupils and two teachers are, except during one forenoon in the week, engaged in the recitation rooms, the supply of air for each person will exceed the amount mentioned.

I consider the present condition of the rooms, with respect to temperature and purity of air, most satisfactory, and I am sure that the same assertion can be made by anyone who wishes to investigate.

Very respectfully,

HUGH J. MOLLOY,
Principal Stetson High School

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